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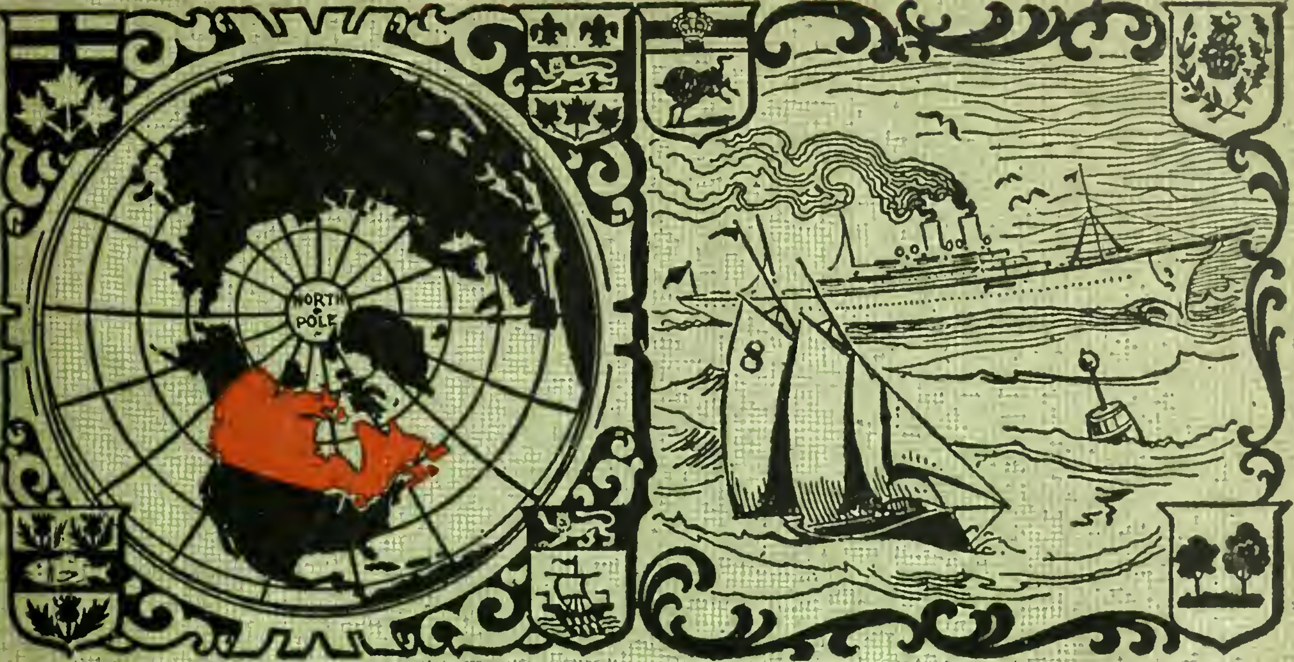

NEW CANADIAN GEOGRAPHY

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NEW
CANADIAN
GEOGRAPHY

SPECIALLY ADAPTED FOR USE IN

PUBLIC AND HIGH SCHOOLS.

Authorized by the Board of Education for use in the Schools of New Brunswick.
Authorized by the Board of Education for use in the Schools of Prince Edward Island.
Authorized by the Board of Education for use in the Schools of Quebec.
Authorized by the Board of Education for use in the Schools of Manitoba.
Authorized by the Board of Education for use in the Schools of North-West Territories.
Authorized by the Board of Education for use in the Schools of British Columbia.

ONE HUNDRED AND THIRTIETH
THOUSAND.

F. E. GRAFTON & SONS,
MONTREAL.

Entered according to Act of Parliament of Canada, in the office of the Minister of
Agriculture, by W. J. GAGE & COMPANY, Limited, in the year
one thousand eight hundred and ninety-nine.

PREFACE.

Norwegian.

GEOGRAPHY is in reality one of the most important subjects taught in school, but it has been degraded in the past to the memorizing of lists of names of places, coupled with their location. This exercise was the most utterly barren of all the processes of bad teaching.

Humboldt, Guyot, Geikie, Huxley, Harris, and Parker have placed Geography on a higher plane, and have made it the true basis of the sciences most intimately related to man's physical existence.

Physically, the earth is studied in this Geography in such a way as to show why some parts of the earth are fertile and some barren. The student will learn not merely that large portions of Northern Africa and Central Asia are deserts, but why they are deserts. He will find not only that there are great salt lakes or marshes in a large portion of Australia, in the mountain plateaus of Asia and North America, and between Europe and Asia, but he will learn the causes of these conditions.

Fellah.

Structural geography is made the basis of the book, but political geography receives very full attention.

The height and shape of the World Ridge and the direction of the winds determine to a large extent the rainfall in different places, and civilization absolutely depends for the location of its centres of effort and population on rainfall. The very shape of the land, its fertility, and its continual transformations depend most largely on rainfall.

Esquimau.

All the causes that affect the earth as man's home are presented briefly and in logical order; the influences that break down the highlands and carry them often thousands of miles to form level countries—those simple processes that have been going on for thousands of years and are still actively going on—the methods by which barren lands are made productive; the many circumstances that affect climate; the influence of the ocean and its currents, of the winds and the mountains; the seasons and their causes; are discussed and illustrated so clearly that the child cannot fail to understand them.

Special attention is paid to the vegetation and to the animals of all parts of the world.

On the Tiber.

Then, when the child has been logically prepared for the study of man himself, the different races of men are presented, not in the old formal, lifeless way, but in such a way as to make the child see the men, women and children of different races and countries as they really appear in their every-day life and occupations. Governments, religions, productions, commerce, etc., follow in logical order.

The maps, relief and political, are brought down to date, and are produced in the most perfect style of modern art.

The illustrations are the finest ever used in any Canadian school book, and they cannot fail to give clear and definite conceptions in regard to the most important elements of true geographical study.

The Map Studies form a very important feature of the book. Instead of giving large amounts of printed information about boundaries, rivers, capes, islands, peninsulas, etc., to be committed to memory or studied from the letter-press, the student is guided in the independent study of maps by carefully chosen questions. The difference between the old plan and the new is based on the central principles of the new education.

The Review Questions at the end of the book will guide both teachers and pupils in the intelligent and related study of the information contained in the letter-press.

The short section relating to the British Empire is of special value since the closer unity of the motherland and the colonies has become a vital question.

Much of the merely reference matter usually found in the body of a geography, has been placed at the end of the book.

This book is based on the excellent Geographies written by Alex. Everett Frye. The maps have been prepared under the supervision of G. M. Dawson, C.M.G., LL.D., F.R.S., Head of the Geological Survey of Canada.

For many of the illustrations on Canadian subjects the publishers are indebted to Messrs. Notman & Son, the well-known photographers; Canadian Pacific Railway, and others.

Arab House.

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THE EARTH.

INTRODUCTION.

Geography treats of the earth as the home of man.

This book describes the earth as our home.

We ought to know a great deal about the earth, because we live on it and use many of its products.

The earth supplies us with food, clothing and all other useful things. Do you not wish to know where wheat and corn grow?—where grassy plains are covered with cattle, horses and sheep?—where trees are cut down, floated to the mills and sawed into lumber?—where coal, iron ore and granite are taken out of the earth?

All these products, and many more, are found in various parts of the Dominion of Canada, our own country, but some of the things which we use are raised by people in other lands.

From this book we are to learn what kinds of countries those people live in, how they dress, what work they do, what they buy of us, and what they sell to us.

We shall also learn why the same kinds of products are not found in all parts of the earth.

Our study will lead us to the cold land of the Lapps, where the sun shines low in the sky for several weeks each summer without setting. In that region, the warm season is too short to ripen much grain, but the flesh, milk and skins of reindeer supply food and clothing.

In other cold parts of the earth, there are vast fields of ice and snow, upon which Eskimos hunt the seal or the polar bear. How different is their life from ours! They see no grain ripening in fields, no cattle grazing in pastures, no fruit hanging on trees.

This book describes wide regions of shifting sand, where no rain falls and no plants grow, except near a few springs. There the people travel mostly on the backs of camels.

Do you know how tea leaves are dried and how silk is woven into fine cloth? You will learn how, when you read about the yellow people in Japan and China.

There are warm lands where coffee berries and many kinds of spices grow. Do you not wish to learn about the people who send us coffee, cloves and nutmegs? Every day, as we study this book and look at its pictures, we shall learn something about the earth,—its forms of land and water, its plants, its animals, or its people.

There are no studies that you will find more interesting than the study of the wonderful changes that are constantly taking place in the conditions around us. You will learn in this book why the seasons change as they do, and why day and night follow each other regularly.

You will understand, after reading this book, why, in some parts of the earth, it is always extremely hot, while in other parts there are always snow and ice.

You will find, too, the causes of winds, and rain, and why, in some parts of the earth, winds blow regularly in the same directions, and how it is that some places have a great deal of rain, while in other places very little rain ever falls.

The tides, and the great currents or streams in the oceans are explained; and the kinds of animals and plants that are found in different countries, are described.

You will see, in the many beautiful pictures, how people dress in different countries, how they travel, and what kind of houses they live in.

THE EARTH, ITS PRODUCTS, AND INHABITANTS.

1. Form and Size of the Earth.

The earth is a great ball of land and water, surrounded by air.

We see so small a part of the earth at a time that it does not look like a ball, but there are many proofs that the earth is round. Here are a few of them:

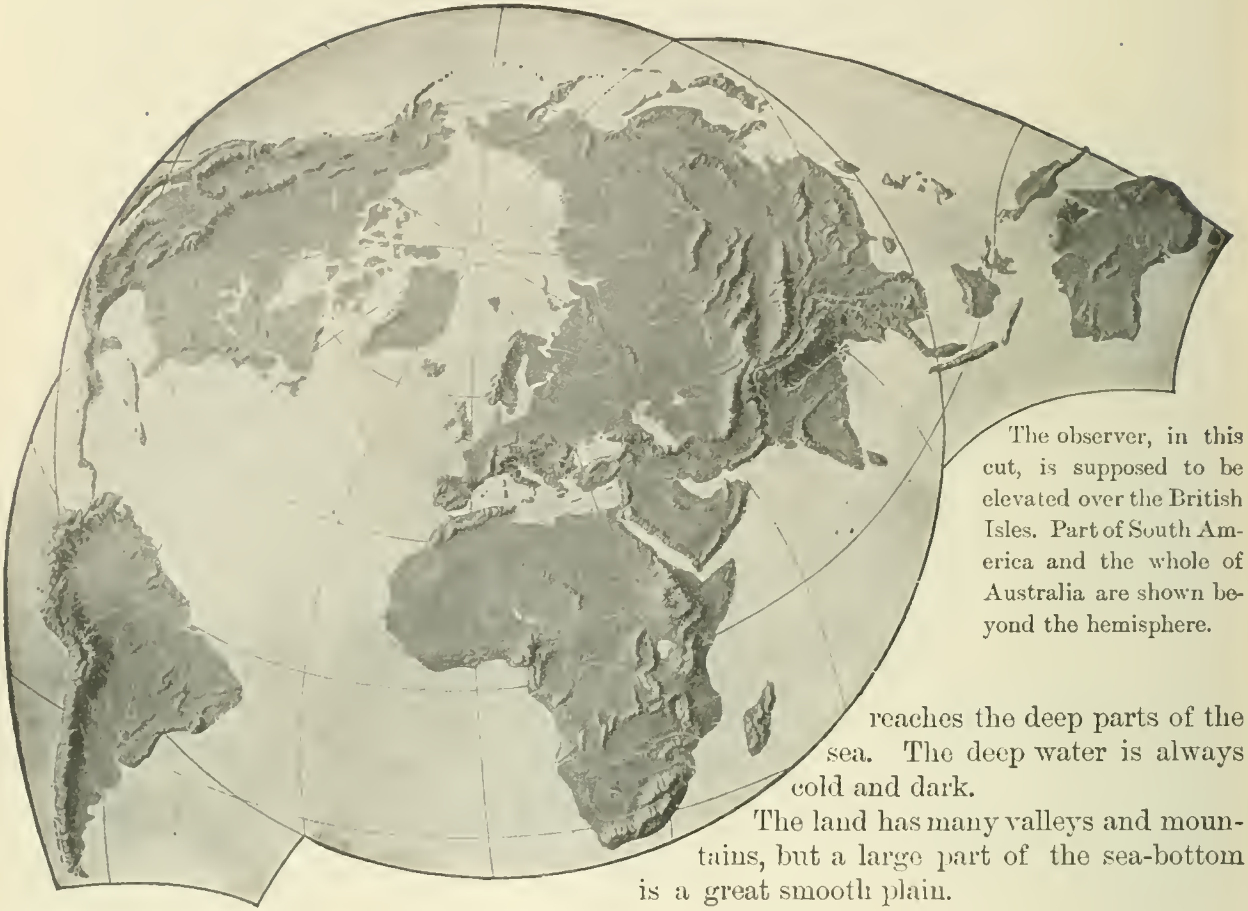
1. Many persons have gone around the earth.
2. As ships sail out to sea, their hulls are first lost to sight, and last of all their highest sails.
3. When travellers go day after day towards the north or the south, new stars rise over the horizon before them, while the stars behind sink beneath the horizon.
4. Sometimes the earth moves between the sun and the moon and casts a shadow on the moon. The edge of this shadow always looks like part of a circle.

The great body of salt water which surrounds the land is called the *sea.* Various parts of the sea are known as *oceans.* The oceans lie in broad hollows on the earth.

The earth is so large that the distance from side to side, through the centre, is nearly 8,000 miles. The greatest distance around the earth is about 25,000 miles. Many millions of people live on the earth, and yet a large part of the land is not used.

If a train of cars were to travel day and night at the rate of thirty miles an hour, how long would it take to go 25,000 miles?

The best globe to use in school is an 8-inch globe, because on this globe an inch in any direction will approximately represent 1,000 miles.



Map showing the World Ridge.

The observer, in this cut, is supposed to be elevated over the British Isles. Part of South America and the whole of Australia are shown beyond the hemisphere.

2. The Land and the Sea.

The greater part of the earth is a mass of rock. On the land most of the rock is covered with soil. Fine mud or *ooze*, covers the rock under the sea.

Many parts of the land do not rise very high above the sea, but other parts are lofty and rugged. Some mountains rise higher than most of the clouds which we see,—even four or five miles into the air.

Most parts of the sea *near the land* are shallow. Far from the shores the sea is in many places two miles deep, and in some places the bottom is four or five miles below the surface.

The land and the surface of the sea have light by day and darkness by night. They have also warm and cold seasons. No sunshine reaches the deep parts of the sea. The deep water is always cold and dark.

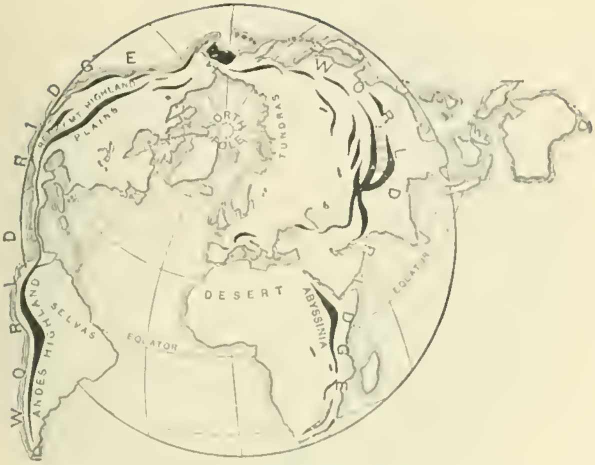
The land has many valleys and mountains, but a large part of the sea-bottom is a great smooth plain.

3. The World Ridge.

The land is not evenly distributed over the earth. Most of it is north of the equator, and therefore much nearer the north pole than the south pole.

About one fourth of the earth's surface is land,—the rest is water. Only a small part of the surface, south of the equator, is land. The sea is not wholly cut into separate oceans by the land, but it spreads in one large body around it.

Through the great bodies of land, we can trace a long chain of highlands, somewhat in the shape of a horseshoe. We will call this chain of highlands the *world ridge*, or the *primary highland of the world*. The greater part of the world ridge consists of long and wide plateaus, broken by mountains and val-



Key to Map of World Ridge.

leys. In many places it is hundreds of miles in width.

On both sides of the primary highland, the land slopes away to the shores and there dips beneath the sea. Most of the longer slopes are on the inner side of the horseshoe-shaped highland.

These slopes make wide plains between the primary highland and the sea. There are few large rivers on the outside of the world ridge. Why?

On which side of the equator are the ends of the primary highlands?

4. Continents or Grand Divisions.

Each of the great highlands in the world ridge forms the backbone of a large body of land. These lands are North America, South America, Eurasia and Africa. Southeast of Eurasia lies a great body of land called Australia.

Which of these bodies of land are north of the equator? Which are crossed by the equator?

There are two parts of Eurasia,—Asia on the east, and Europe on the west. Which part is the larger?

North America, South America, Europe, Asia, Africa and Australia are called *continents*, or *grand divisions*.

Which of these continents is wholly south of the equator?

Behring (Bering) strait cuts through the primary highland and separates the *Old World* from *America*, or the *New World*.

Which continents are in America? Which are in the Old World?

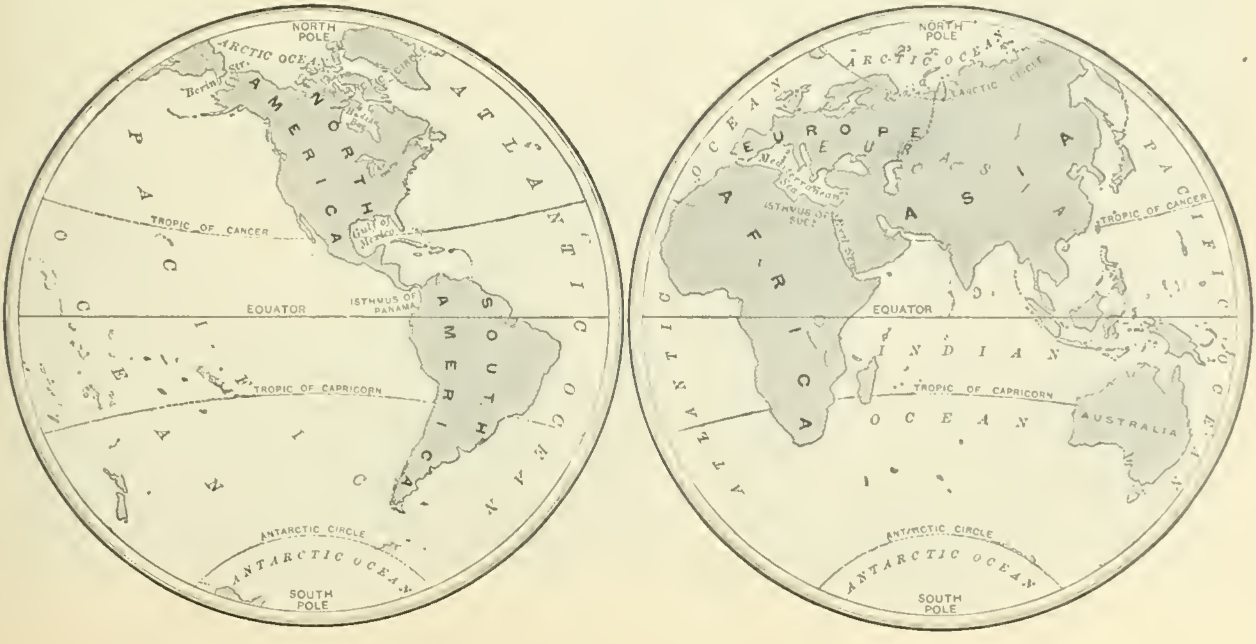
What isthmus connects the two parts of America?

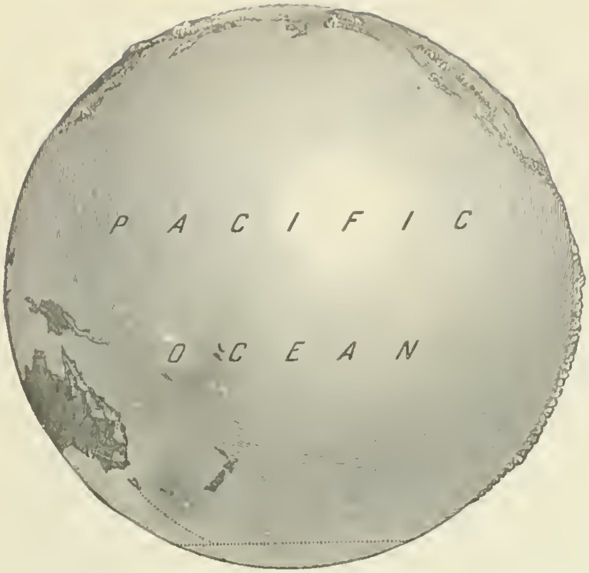
Where is the isthmus of Suez? What seas does it separate?

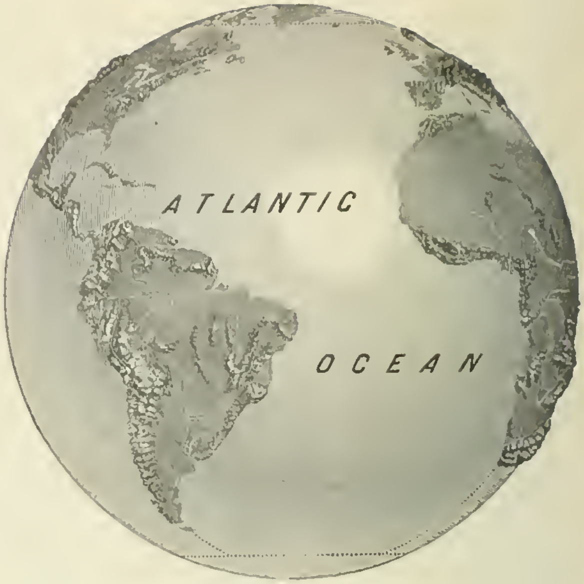
Which is the larger,—Africa or Eurasia? Africa or North America? Australia or North America?

Which continent is farthest from your home?

Write as many facts as you can about the continents and oceans, using the map on this page.







5. The Oceans.

The oceans cover about three fourths of the earth's surface and wholly or partly separate the continents from one another.

What three oceans extend northward from the Antarctic ocean?

Which ocean is east of America? Which is west of America? Which of these two oceans is the larger?

On which side of the Old World is the Atlantic ocean?

On which side is the Pacific ocean?

What small ocean adjoins the Atlantic on the north? Which pole is near the middle of that ocean?

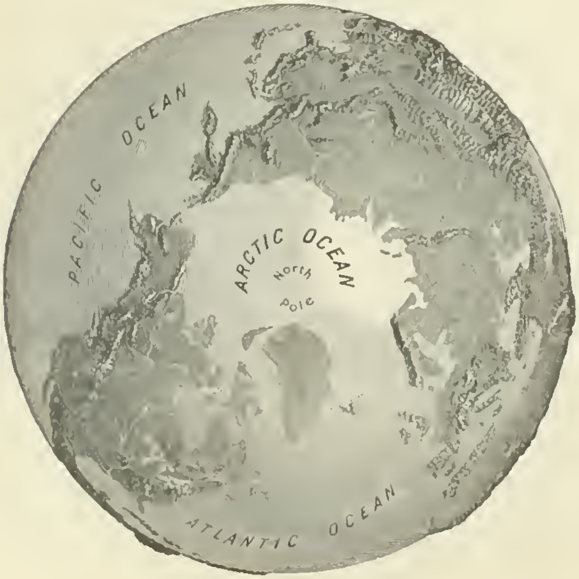
What ocean is south of Asia? What lands partly surround that ocean?

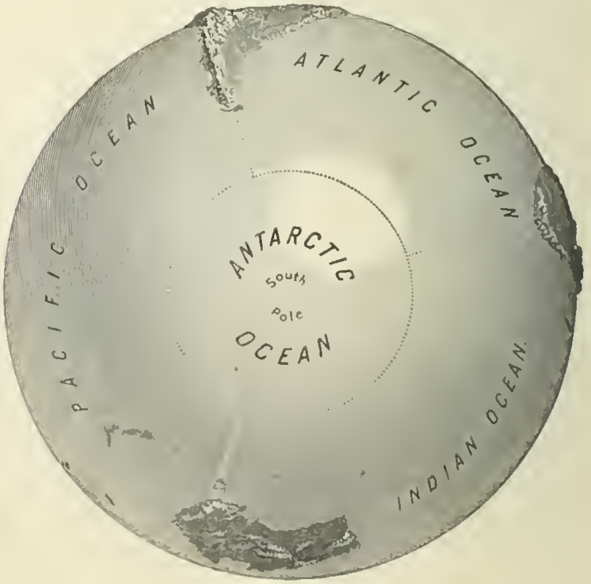
Name the continents which border on the Pacific ocean; on the Atlantic ocean; on the Arctic ocean.

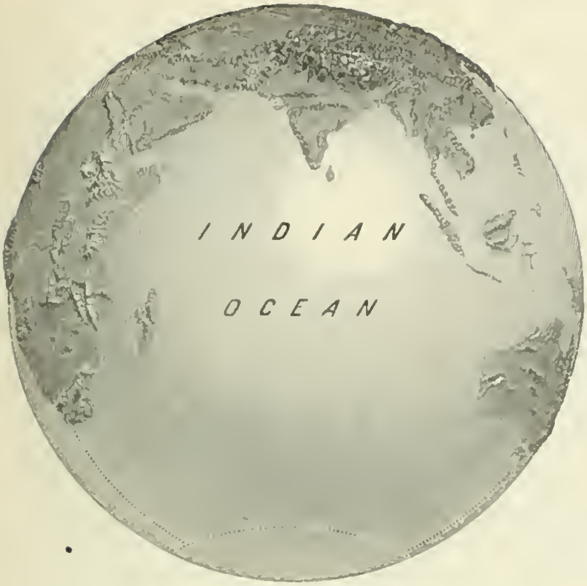
What oceans border on North America? On Asia? Australia? Africa? South America?

What continents border on the Atlantic ocean?

What is the chief difference between the boundaries of the Arctic Ocean and the boundaries of the Antarctic ocean?



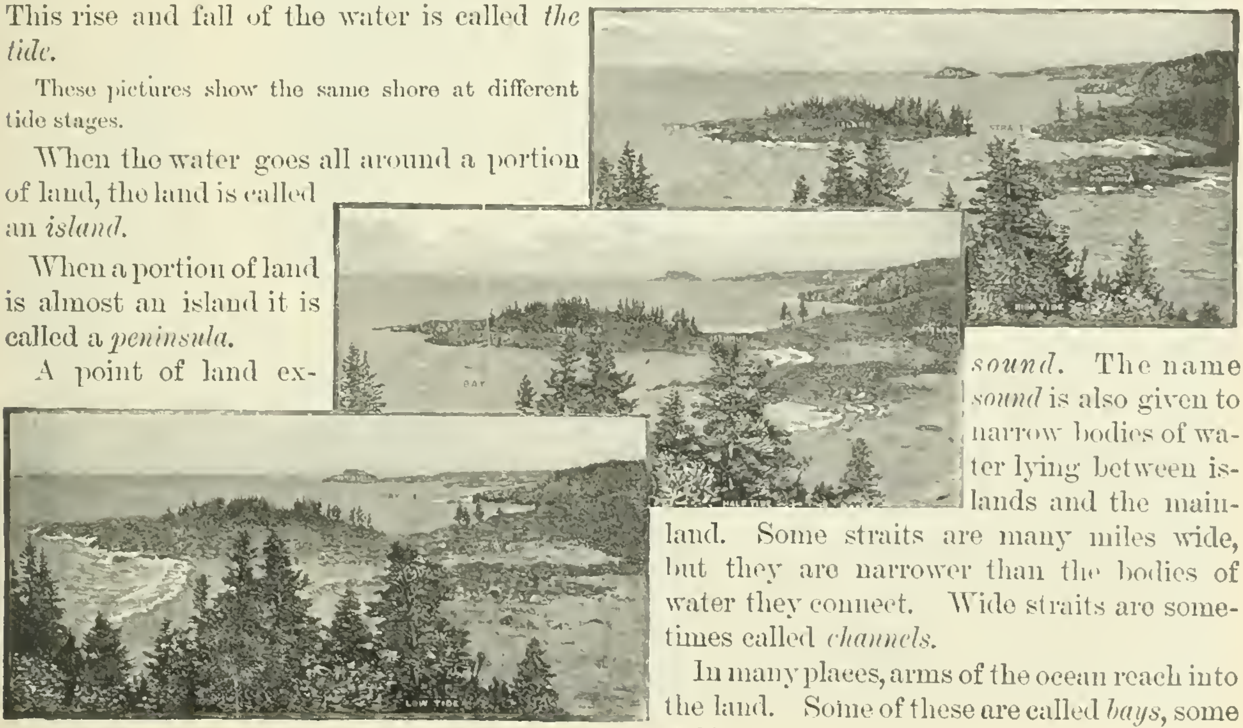




America.

6. Shore Forms.

These pictures represent a part of the ocean and the land bordering on it. Twice each day the water of the ocean slowly rises along the shore, and twice it slowly falls and leaves the beach bare. It takes about six hours for the water to rise and about six hours for it to fall. This rise and fall of the water is called *the tide.*



These pictures show the same shore at different tide stages.

When the water goes all around a portion of land, the land is called an *island.*

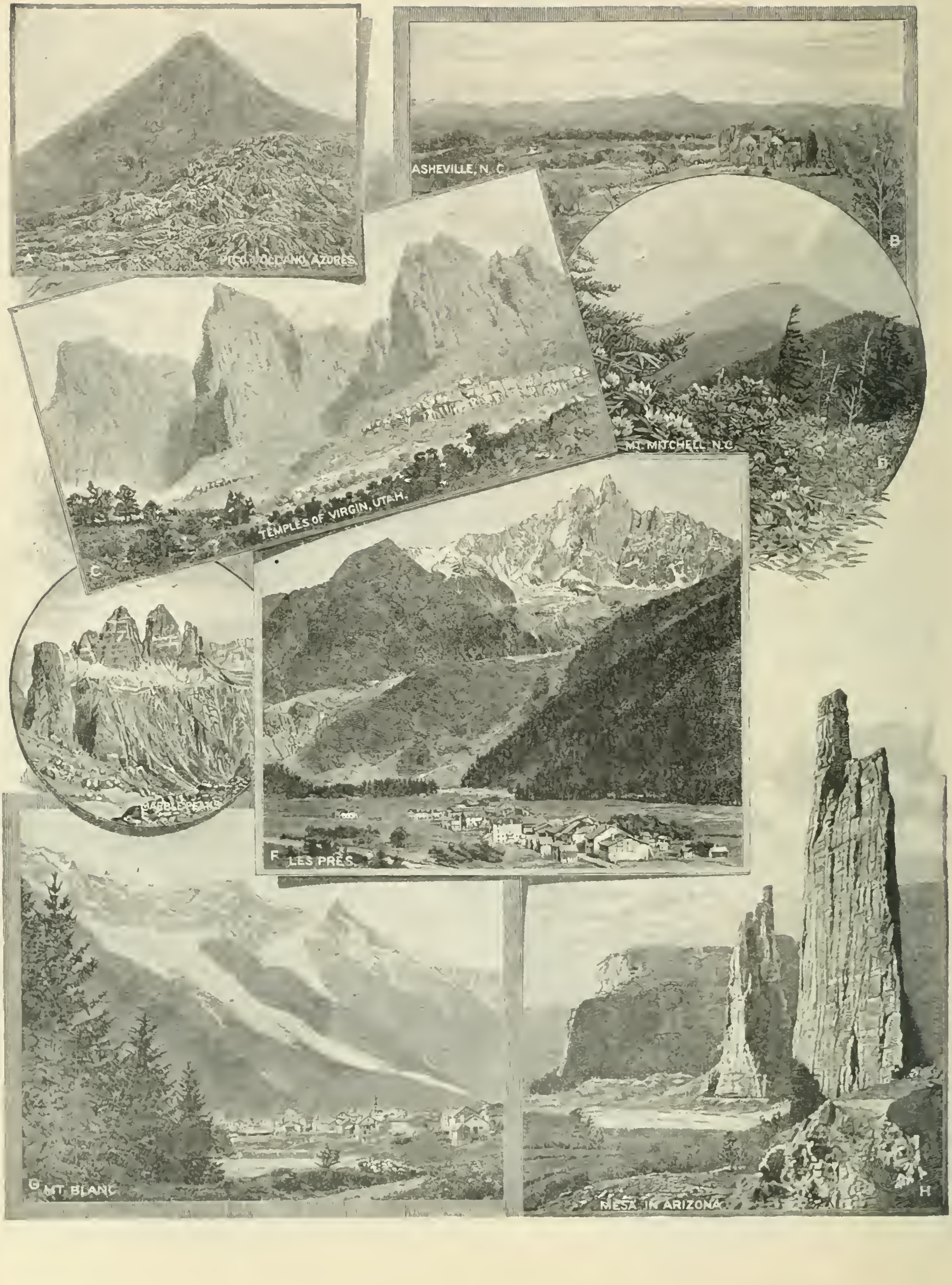
When a portion of land is almost an island it is called a *peninsula.*

A point of land extending into the water is a *cape.* A narrow neck of land connecting two larger portions of land is called an *isthmus.*

A *strait* is a body of water connecting two larger bodies of water.

A long narrow strait is sometimes called a *sound.* The name *sound* is also given to narrow bodies of water lying between islands and the mainland. Some straits are many miles wide, but they are narrower than the bodies of water they connect. Wide straits are sometimes called *channels.*

In many places, arms of the ocean reach into the land. Some of these are called *bays,* some *gulfs* and others *seas.*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E
MARBLE PEAKS
F
LES PRES
G
MT. BLANC
MESA IN ARIZONA
H

Mountains (Jungfrau, Alps).

7. Mountains.

Mountains are rugged parts of the earth's surface that rise high above the surrounding country. They are generally formed by the wearing of deep valleys in regions that have been greatly uplifted. The mountains are the high parts not yet worn away.

Some mountain regions are worn away to sharp rocky peaks. The mountains of other regions are rounded like domes. Still others have flat tops and steep sides.

A high and rugged ridge, or several such ridges near one another, may be called a *mountain range.* Some ranges are hundreds of miles long.

A number of ranges having the same general direction in one great highland forms a *mountain system.*

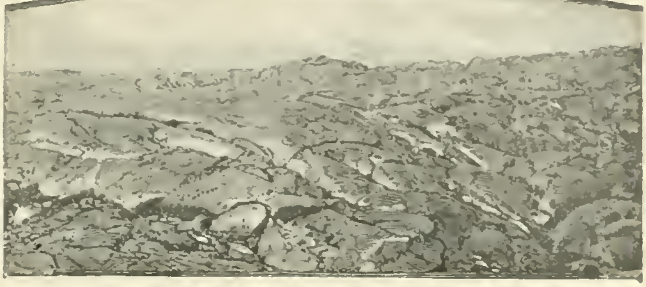
All the ranges in the western part of North America belong to the *Rocky Mountain System.* This mountain region was very unevenly lifted, and is now so greatly worn away that its surface has gone down to beds of rock that were once deeply buried. It is in such deep layers of rock that veins yielding gold and silver ore are found. When the surface is worn down near them they can be mined.

High mountains reach into the upper air, which is cold, even when the air in low valleys, not many miles away, is very warm. On the lofty peaks, three miles or more above sea level, the air is so light or thin that persons find it difficult to breathe there. The lower air, near the level of the sea, is dense because it is pressed down by all the air above or upon it.

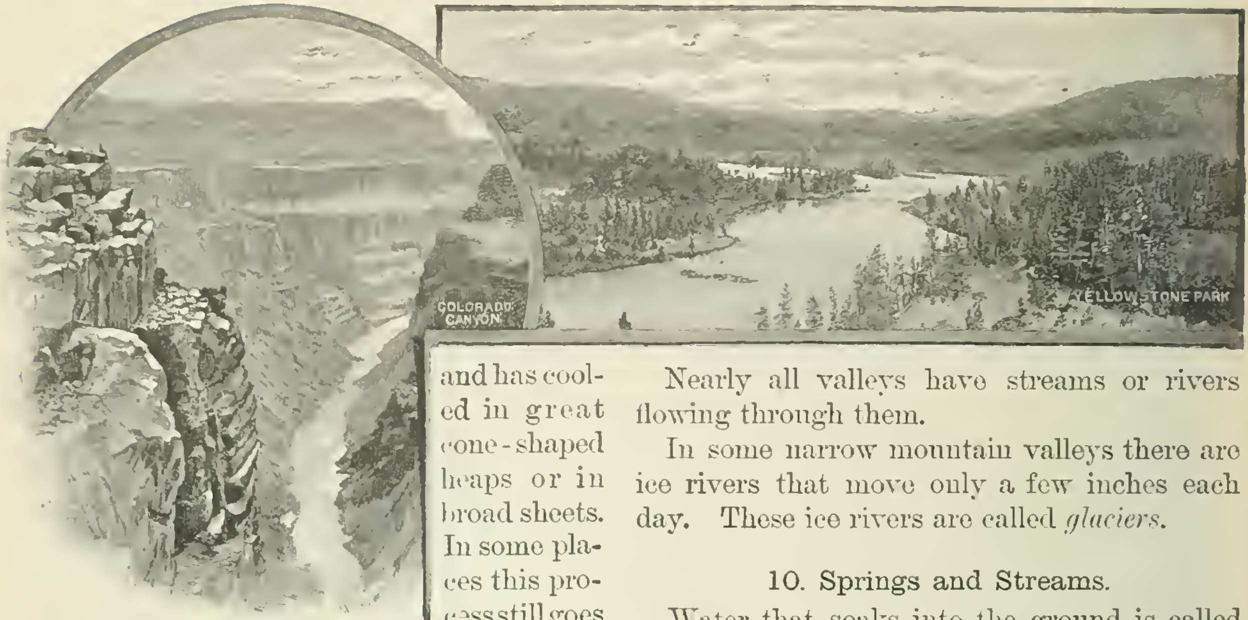
Great snowslides or landslides sometimes rush from the mountain sides into the valleys, uprooting trees and burying houses. A slide of snow or of rock waste is called an *avalanche.*

8. Volcanoes.

In some parts of the world melted rock, or *lava,* has been pushed up from beneath the surface through breaks in the surface rocks,



Lava Field.



and has cooled in great cone-shaped heaps or in broad sheets. In some places this process still goes on. Each of these cone-shaped masses is called a *volcano*. It may be no larger than a hill, or it may be two or three miles in height.

The bursting forth of lava from a volcano or a fissure is called an *eruption*. Many eruptions must take place to build up a great volcanic cone.

The molten rock from volcanoes sometimes spreads out in wide plains. In some places lava has poured from long fissures in the earth's surface, and has formed plains that cover many thousand square miles. In India there was a lava flow which spread over an area of about 200,000 square miles.

Most volcanoes are found not many miles from the coasts of the continents, or on islands not far off shore. Many more volcanoes are found near the Pacific coast than near the Atlantic.

A large number of small islands have been wholly built by volcanic action, sometimes even growing from the deep floor of mid-ocean.

9. Valleys.

Valleys are low lands between mountains or hills. Some valleys are very narrow, some are wide. Some have gently sloping sides, and others have steep rocky sides. In some places deep valleys with steep rocky sides are called cañons. In other places they are called gorges.

Nearly all valleys have streams or rivers flowing through them.

In some narrow mountain valleys there are ice rivers that move only a few inches each day. These ice rivers are called *glaciers*.

10. Springs and Streams.

Water that soaks into the ground is called ground water. It sometimes travels under ground for many miles.

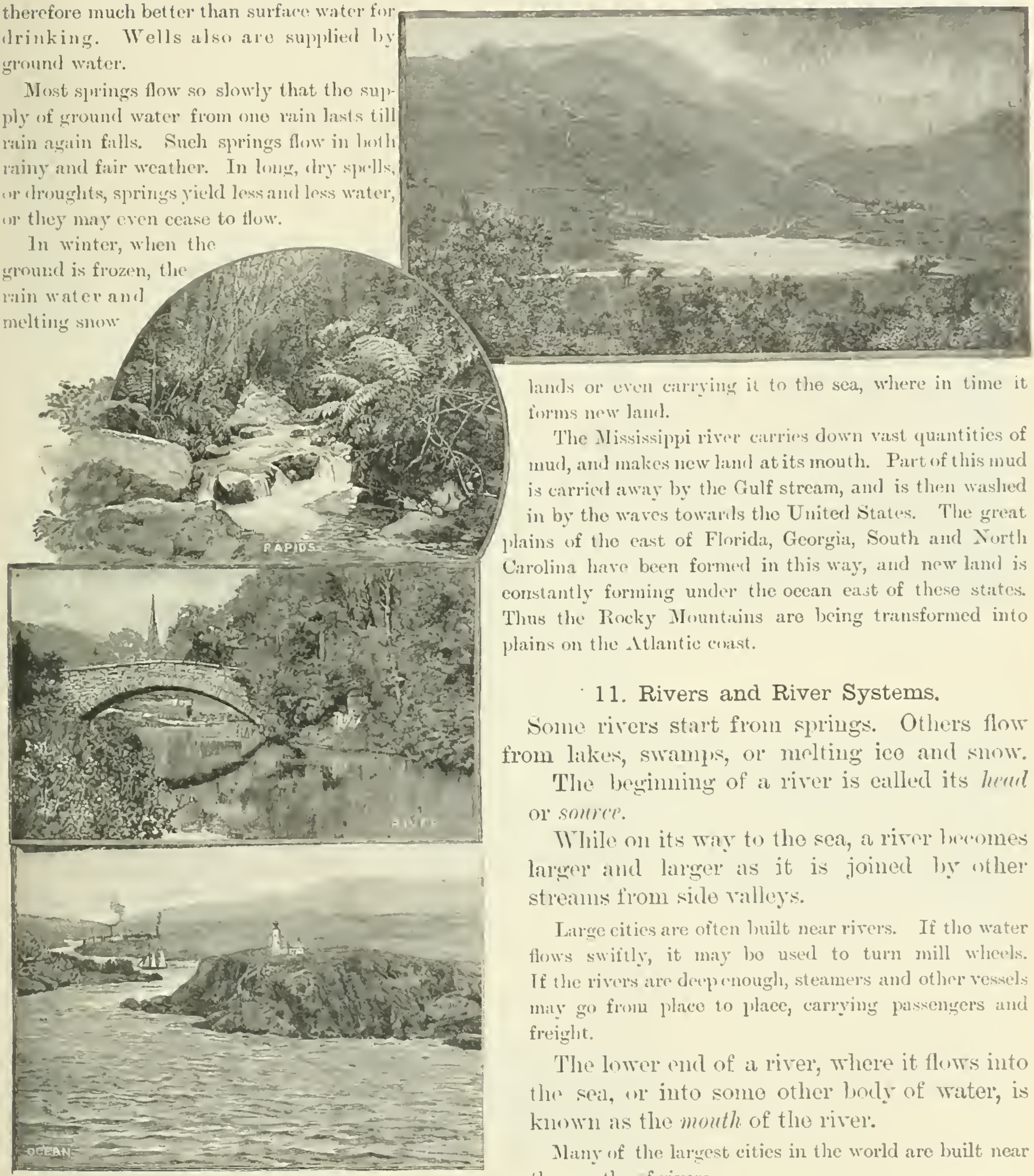
Water may often be seen coming out of the ground through little crevices, thus forming *springs*. Many springs are found at the foot of hill-slopes. Others appear along borders of brooks or rivers. In many places the ground water is found rising in the beds of streams or lakes.

The spring which is farthest up the valley trough is called the *source*, or *head* of the stream that it feeds.

Surface water is often muddy, but nearly all ground water is clear, because it moves too slowly to carry waste. Spring water is therefore much better than surface water for drinking. Wells also are supplied by ground water.

Most springs flow so slowly that the supply of ground water from one rain lasts till rain again falls. Such springs flow in both rainy and fair weather. In long, dry spells, or droughts, springs yield less and less water, or they may even cease to flow.

In winter, when the ground is frozen, the rain water and melting snow run quickly to the streams and often flood them. They then cut away their banks and wash the rock waste down their valleys, spreading it over the flooded lands or even carrying it to the sea, where in time it forms new land.



From Source to Mouth.

The Mississippi river carries down vast quantities of mud, and makes new land at its mouth. Part of this mud is carried away by the Gulf stream, and is then washed in by the waves towards the United States. The great plains of the east of Florida, Georgia, South and North Carolina have been formed in this way, and new land is constantly forming under the ocean east of these states. Thus the Rocky Mountains are being transformed into plains on the Atlantic coast.

11. Rivers and River Systems.

Some rivers start from springs. Others flow from lakes, swamps, or melting ice and snow.

The beginning of a river is called its *head* or *source*.

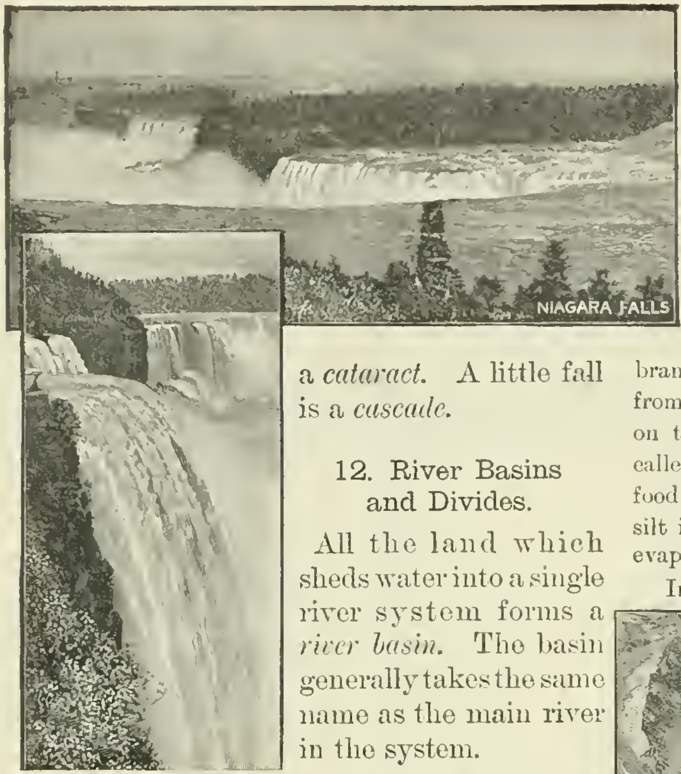
While on its way to the sea, a river becomes larger and larger as it is joined by other streams from side valleys.

Large cities are often built near rivers. If the water flows swiftly, it may be used to turn mill wheels. If the rivers are deep enough, steamers and other vessels may go from place to place, carrying passengers and freight.

The lower end of a river, where it flows into the sea, or into some other body of water, is known as the *mouth* of the river.

Many of the largest cities in the world are built near the mouths of rivers.

Rivers often wear steep places in their beds. The water leaps down, forming *waterfalls*. A great fall of water over a steep bank is called



Niagara Falls.

a *cataract.* A little fall is a *cascade.*

12. River Basins and Divides.

All the land which sheds water into a single river system forms a *river basin.* The basin generally takes the same name as the main river in the system.

A river system drains all the land which forms its basin. From the slopes of the basin, the streams carry the land waste towards their mouths. The longer the streams continue to flow, the lower the slopes of their basins are worn.

Find the line which bounds the basin of the river marked *C* in the picture, in the opposite column. This runs along the top, or *crest* of the ridges, and separates the slopes in basin *C* from those in the other basins. Such a line is called a *divide* or *water parting.* It divides the slopes of the basins.

Some of the most important divides on the earth cross wide plains whose slopes are too gentle for the eye to detect.

The Amazon basin in South America is the largest in the world. Its main river pours into the ocean more water than any other stream. This basin is crossed by the equator, and covers more than two million square miles. Steamers can go for thousands of miles up and down the many branches of the Amazon system.

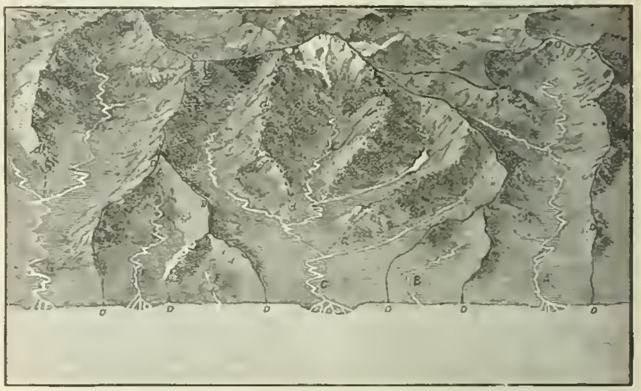
The Mississippi basin is the largest in North America, but is only about one half as large as the Amazon basin. The map on this page shows where these great basins are.

13. Plains and Deltas.

After heavy rains, or after much snow has quickly melted, great volumes of water run down the brooks and into the rivers. Then the rivers often overflow their banks and spread over the flat meadows, called *flood plains,* on either side.

Flooded rivers are very muddy, for they not only cut their own banks, but their swollen branches also bring them a great deal of land waste from the sides of their valleys. The water moves slowly on the flood plains and deposits thin layers of mud, called *silt.* When the flood is over, this silt gives fresh food to plants. After a heavy rain-storm, you may find silt in the hollows by the roadside, where the water has evaporated, or has soaked into the ground.

In narrow valleys the flood plains extend for only a short distance on either side of the river. In broad valleys the flood plains may be several miles wide.

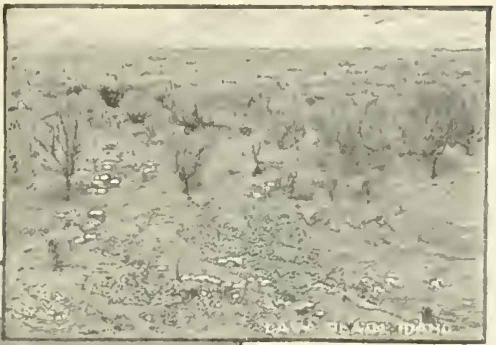


Mountainous Regions and River Divides.

Many people live on flood plains because they are so fertile. In dry countries, flood plains are the best places for people to settle, because the river water can be led in canals and ditches across such plains.

America.

Most of the silt borne along by rivers is slowly washed down to the sea. A large part of the silt settles near the river mouths, where the water flows more slowly. The settlings, called *sediment*, form low and flat plains.



Lowlands thus formed at the mouths of rivers are known as *deltas.* Most deltas are the lower ends of flood plains built out into the sea. The soil of delta plains is generally fine and fertile.

Deltas gradually become flood plains and new deltas form farther out in the sea.

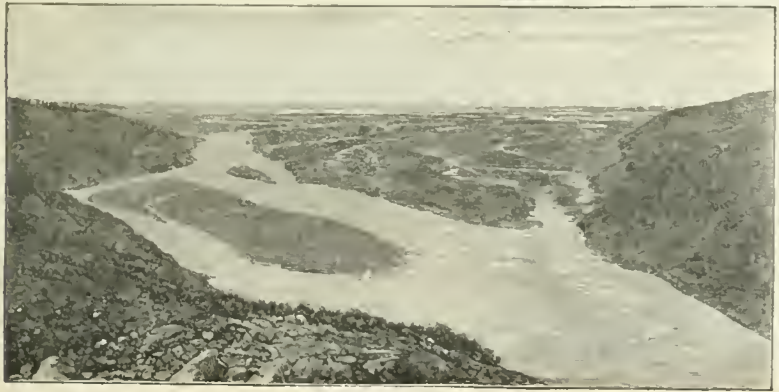
In the far east, about half-way round the earth from us, there is a large delta plain on which millions of Chinese people live. Most of this delta was made by the Yellow river.

This river sometimes takes a new course across its delta plain. Fields, villages and cities are sometimes flooded or swept away, and many people are drowned.

Prairie or Plain Scene in Manitoba.

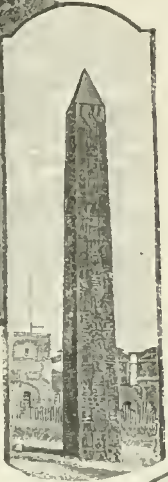
Plains are formed in various ways. In Canada, there are thousands of square miles of plains, from the Rocky Mountains to the eastern part of Manitoba, like the grain field in the picture on this page where the men are at work. Long ages ago this plain was under water.

The rocky plain upon which bushes are growing is a lava plain. Melted rock or lava came up from the inside of the earth and formed



Delta in Alaska.

Weathered Rock.



this plain. The lava spread out and cooled and hardened. Soil forms on it by the action of the weather. High plains are sometimes called *plateaus.*

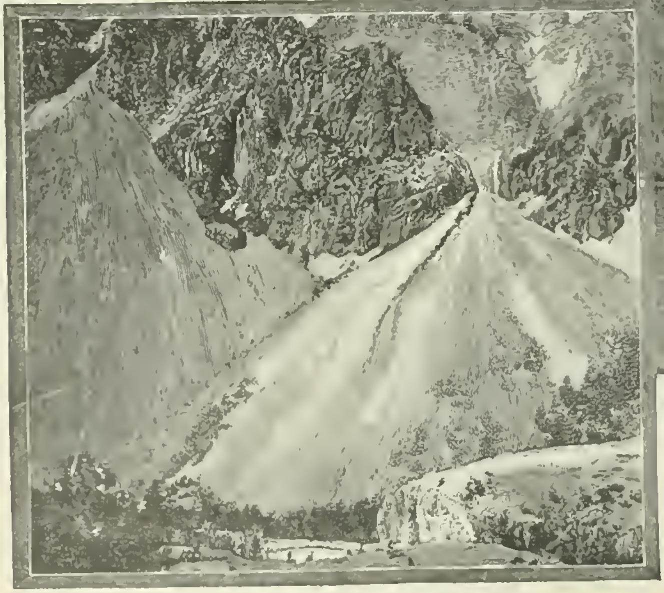
Most fertile land is on plains, and therefore most people make their homes on plains.

The Mississippi river, in America, has made a flood plain several miles wide and hundreds of miles long. Its lower part is a very large delta plain. These lowlands built by the great river are very fertile.

14. The Waste of the Land.

As the weather changes from warm to cold, or from wet to dry, all rocks exposed to the air and the rain slowly decay, but many years may be needed to loosen only a few grains. As rocks decay or crumble they are said to *weather.* The loosened parts weather finer and finer, forming *rock waste* or *land waste.* In some places the rock waste is thirty or forty feet in depth, but in most places it is thinner. Finely crumbled rock mixed with plant and animal matter is called *soil.* Year after year plants grow and decay, while myriads of insects and worms live and die in the fine rock waste. The remains of the plants, the insects, the worms and other creatures mingle with the fine rock waste to form the dark rich topsoil. The roots of most plants grow in the topsoil. When it is moist, the plants take from it part of the food needed for their growth.

Rock Waste at Foot of Cliff (Spitzbergen).



Steep Alluvial Fan.

In lands that have but little rain and frost, rocks weather very slowly. In our own country, where rains are common and where winters bring frosts and thaws, the decay of rocks is more rapid.

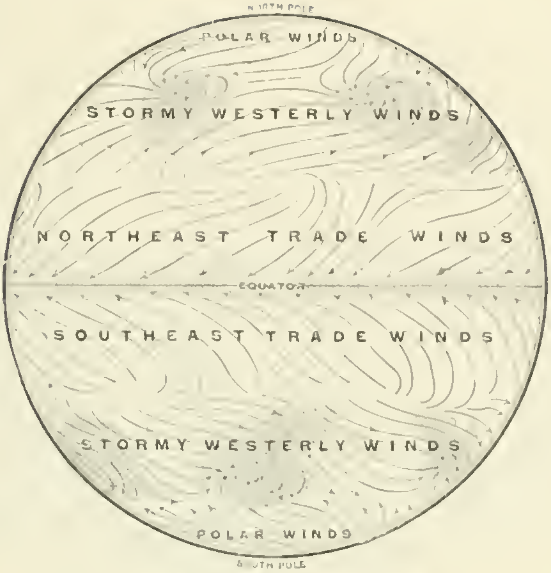
The monument shown in the picture on the opposite page, stood for thousands of years in Egypt, where rain seldom falls. There its surface showed but few signs of decay.

Not many years ago, this monument, Cleopatra's Needle, was brought to New York. The rock then crumbled so fast that it became necessary to protect the surface from the weather.

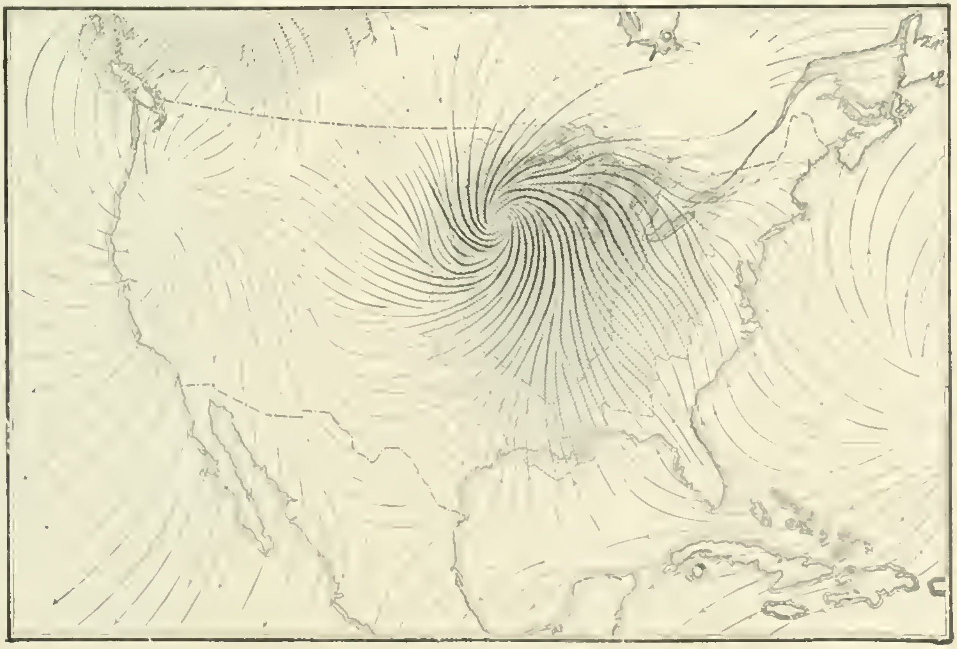
15. Land Waste on the Way to the Sea.

In rainy weather the surface waste is washed down the slopes, but in both wet and dry weather the whole sheet or layer of soil and coarser rock waste is very, very slowly creeping down hill. With every change from wet to dry, from warm to cold, or from frost to thaw, the rock waste is weathering finer and finer as it moves down the slopes.

The coarse rock waste rolls down, making steep slopes at the foot of the crags. The finer waste is washed into the lowlands.



General Plan of the Winds.
(The dotted areas indicate rain.)



Eddying Storm moving Eastward.

When waste is washed down from valleys on mountain slopes, it sometimes forms great fan-shaped heaps. These heaps of waste are called *alluvial fans*. They often become very large in dry countries where the streams are not strong enough to wash the waste down the valleys.

The topsoil in valleys consists mainly of fine waste that has been washed from the higher land. Most of the ground water flows into the valleys and helps to keep the soil moist. For these reasons many of the best farms are in lowland valleys.

16. Winds and Rainfall.

Winds.—Cold air, being heavier than hot air, flows towards and creeps under the hot air, which rises upwards.

As all parts of the earth are not heated alike, the air is kept in motion. Some of the currents of air move along the earth's surface, and others flow far above it. The *winds*, or surface currents, are the more important to know, as they gather moisture for the lands and do many other kinds of useful work.

Rainy Weather.

Dry Weather.

Wide currents of air flow into the hot belt from the regions on both sides. If the earth did not rotate, each of these currents would flow due south or north, towards the heat equator. The turning of the earth on its axis turns these winds westward, so that they flow into the hot belt from the north-east and the south-east.

These winds are called the *trade winds*. On the oceans they are very steady, and blow with little change by day or by night. The trade winds are seldom interrupted by bad weather or storms.

Outside the trade wind path, the winds of the warm and cool belts vary in direction from time to time, and are often stormy, but they blow mostly from the west, and are therefore called the *westerly winds.*

The *westerly* winds blowing inland from over the oceans are neither hot in summer nor cold in winter. The great bodies of water over which they blow, and from which they get their moisture and warmth, have nearly the same temperature both in winter and in summer. The westerly winds, therefore, give an even temperature to the western coasts of the continents in the warm and cool belts.

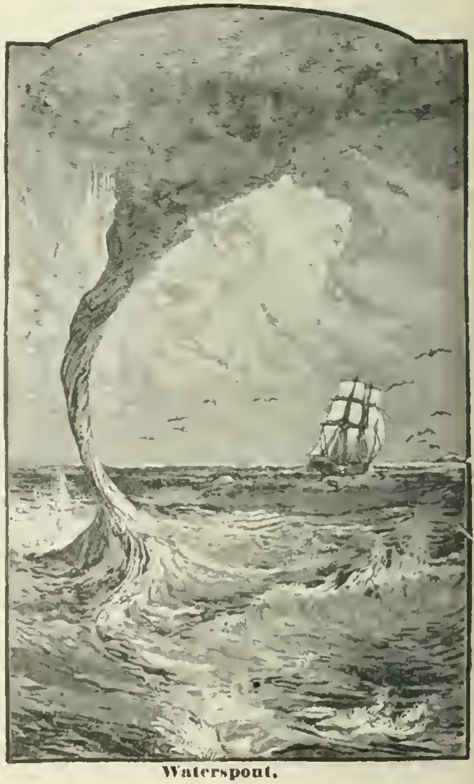
The western coast of Canada owes the mildness of its climate to the westerly winds from over the Pacific ocean. Western Europe also has a more even temperature than the inland regions farther east.

The westerly winds, north and south of the trade winds, as shown in the diagram, are sometimes called "*return trade winds*," or "*anti-trade winds.*"

As the trade winds blow constantly from the east, why do they not cause the earth to stop rotating?

In the cold belts the winds are variable and often stormy. They generally blow in about the same direction as the trade winds,—most frequently from the north-east in the north polar region, and from the south-east in the south polar region. These are called *polar winds.*

Rainfall.—Vapor rises from the ocean, and the winds carry it about in the form of clouds. When the air is cool it cannot hold so much vapor as when warmer. When cooled enough, the vapor in it forms clouds, often with rain or snow.



Waterspout.

When the air grows warmer it can hold more vapor, and no clouds then form in it.

The trade winds blow towards the heat equator, and therefore do not give out rainfall unless they are chilled on the way. Lowlands in the path of these winds are generally dry, but the windward sides of highlands in the trade wind belts receive abundant rainfall.

When air rises to cross highlands, it expands and cools. Some of its vapor may then be condensed into clouds which may yield rainfall on the slopes of the highlands.

Some of the great deserts in the world are lowlands in the path of the trade winds.

On highlands and on windward coasts the rainfall from the storms of the westerly winds is very heavy. Far inland the rainfall is much lighter.

Waves on the Seashore.

17. Work of the Winds.

Strong winds cannot reach soil that is covered with grass or trees, but in dry lands where there are but few plants, the winds sweep over the ground and scatter fine rock waste far and wide. Coarse sand is drifted along like dry snow in winter.

The particles of sand are blown against one another and against bare rocks. Thus both the sand and the rocks are ground to dust. In deserts, where the drifting sand is plentiful, it gathers in hills called *dunes*. Some of these sandy hills are from three hundred to six hundred feet high. Dunes are also found on sandy shores. Waves throw sand upon the beaches, and the winds may then blow it inland. Fields, forests and villages are sometimes buried by drifting sand. The "Sand Banks" of Prince Edward County, Ontario, were formed in this way.

Desert whirlwinds take up fine dust, which may then be blown many miles away. Some of the dust falls into the sea, and the winds thus help along the work of rivers.

Sails of ships on the ocean west of the desert of Sahara are often covered with reddish dust from that barren region. Locate this desert on the map of Africa.

Whirlwinds at sea are generally formed under heavy clouds, from which whirling funnel-shaped spouts seem to descend and join the spray raised from the waves. The long whirling funnels are called *waterspouts*.

Desert Dunes.

Winds form waves and the waves which roll against the land wash stones and sand back and forth on the seashore, grinding them very fine.

Winds mix the different parts of the atmosphere and keep it fresh and pure. They carry water vapor from the sea to the land, and thus help to determine which parts of the land shall yield grain and fruits, and which parts shall remain barren.

Winds scatter the seeds of some kinds of plants, and also aid in the flight of birds by lifting them, somewhat as kites are lifted. If it were not for currents of air there would be no sailing vessels nor windmills.

Winds are sometimes so violent that they wreck vessels and blow down trees and buildings.

ROSEG GLACIER

GREENLAND ICE SHEET

ICEBERG

ROCKS SMOOTHED BY ICE ACTION

DRUMLIN

Water spouts occur most frequently over the ocean near the equator.

18. Snow and Ice.

On some mountains, snow lies all the year and becomes very deep in the high valleys. Rain soaks into the snow, making it more compact. The heavy mass slowly changes into ice. As the layers of ice on a mountain grow thicker they creep down the slopes. When the ice enters the lower and warmer valleys, it gradually melts and forms brooks or rivers. Such a body of ice slowly moving down a slope is called a *glacier*.

Rock Waste at the End of a Glacier.

Glaciers carry along rock-waste, stones, gravel, sand and clay. The ice sometimes hollows out basins in the bottoms of valleys.

The heap of waste at the end of a glacier is a *terminal* moraine.

In former times there were glaciers in some parts of the world, where none are now found. Lakes abound in such regions. The water lies in the basins scraped out by the ice, or behind the barriers which the rock waste formed across old river valleys.

A large portion of Canada was at one time covered by glaciers that slowly moved southward till they melted. The formation of the lake district between Canada and the United States was changed by glacial action. The boulders found in Canada and the northern United States were deposited by the melting of the ice of the glacial period.

One of the pictures on page 18 shows a rocky ledge, smoothed and rounded by the action of ice. Another picture shows a long, low hill built of coarse rock waste that was left in this form by an ancient ice-sheet. Such a hill is called a *drumlin*. There are many old glacial lakes, smoothed rocks and drumlins in the eastern portion of Canada.

When glaciers push their way into the ocean, huge blocks of ice break off and float away. These floating masses are called *icebergs*.

Far away in the north is a land called Greenland. The interior of that land is covered with a thick sheet of ice and snow that moves very slowly towards the ocean on either side. Wide and deep glaciers from this ice-sheet creep into the sea, where huge blocks of ice break off and become icebergs.

19. Ocean Currents.

Winds blowing day after day for a long time against waves in the sea cause the surface water to drift slowly along, and thus form *ocean*

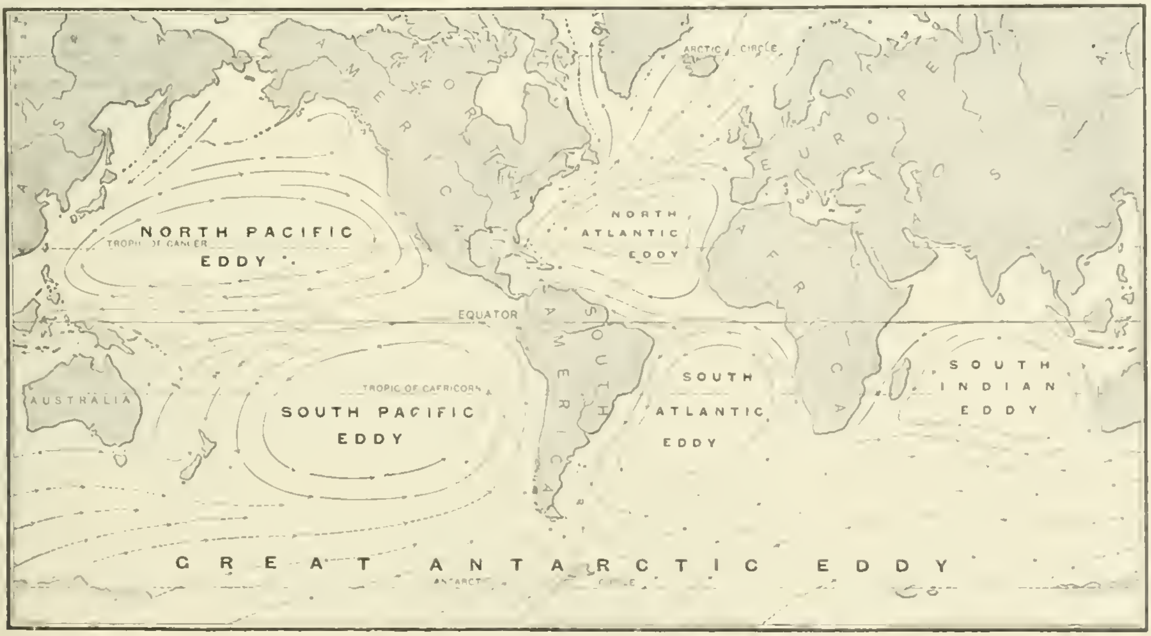


Chart of the Ocean Currents.

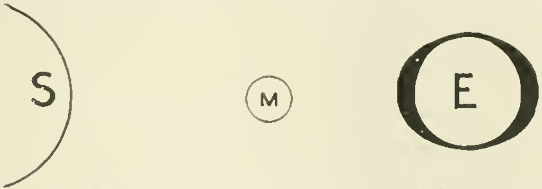
currents. These currents move much more slowly than the winds.

In each ocean the currents move in the general direction of the winds over them. The trade winds blow the ocean currents westward, and the westerly winds blow them eastward. The land prevents the currents from moving round and round the earth, and compels them to circle around, or eddy, in each ocean.

The Atlantic and Pacific oceans have eddies both north and south of the equator. The Indian ocean has a large eddy south of the equator, but the ocean currents north of the equator flow back and forth with the season winds, or monsoons, which prevail over that ocean.

The ocean eddies north of the equator move slowly in the direction in which the hands of a clock turn. The ocean eddies south of the equator move in the opposite direction, or against the hands of a clock.

In the southern cool belt the oceans spread all the way around the earth. There the drifting waters on the southern sides of the Pacific, Atlantic and Indian eddies unite to form a great current, sweeping slowly towards the east. The current flows entirely around the Antarctic ocean, and may be called the *Antarctic eddy.* It receives cold water from the south polar ocean.



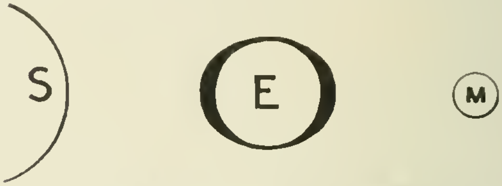
Sun and Moon in conjunction—High Tides.

Part of the water of the North Atlantic eddy flows between the island of Cuba and the mainland of North America. The current issuing from this passage is called the *Gulf stream.* Joining the rest of the eddy, the Gulf stream spreads as a broad drift far to the northeast. Part of this drift turns back southward into the hot belt, and part branches towards the Arctic ocean.

The large branch of the North Atlantic eddy which runs north-eastward into the Arctic ocean bears much warmth to it. A cold current from the Arctic ocean flows southward along the north-east coast of North America. This is called the Polar current. It carries icebergs and fields of ice southward to the banks of Newfoundland.

20. The Moon and the Tides.

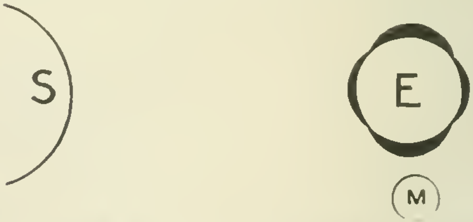
Twice each day the ocean slowly rises and falls on its shores. For about six hours the water creeps up the beaches and against the foot of cliffs. During the next six hours it slowly settles back. The rise and fall of the water is called the *tide.* The tide is not felt on the ocean, and is seldom very strong on headlands, but in narrowing bays the water rises ten, twenty, or thirty feet. In the Bay of Fundy the tide sometimes rises even to the height of fifty or sixty feet, when the wind blows strongly up the bay.



Sun and Moon in opposition—High Tides.

There is a tide on the side of the earth towards the moon, and another on the opposite side at the same time.

Tides are chiefly caused by the attraction of the moon, but partly by the attraction of the sun.



Sun and Moon at right angles—Low Tides.

When the moon and sun are forming tides together, at the same two places, that is at *new* and *full* moon, we have high or *spring* tides. When the moon is at her *quarters*, the sun and moon attract the earth at right angles to each other, and not in the same line, and we therefore have small or *neap* tides.

The flowing in of the tide is called its *flood;* the flowing out is called its *ebb.*

21. The Motions of the Earth.

The Earth has three motions: one through space as a part of the great Solar system of which it forms a part; one around the Sun; and one on its own axis.

1. The sun and the planets that revolve around it form the *Solar System.* The solar system as a whole moves through space at the rate of 150,000,000 miles a year. The Earth, as one of the planets, moves with the rest of the solar system.

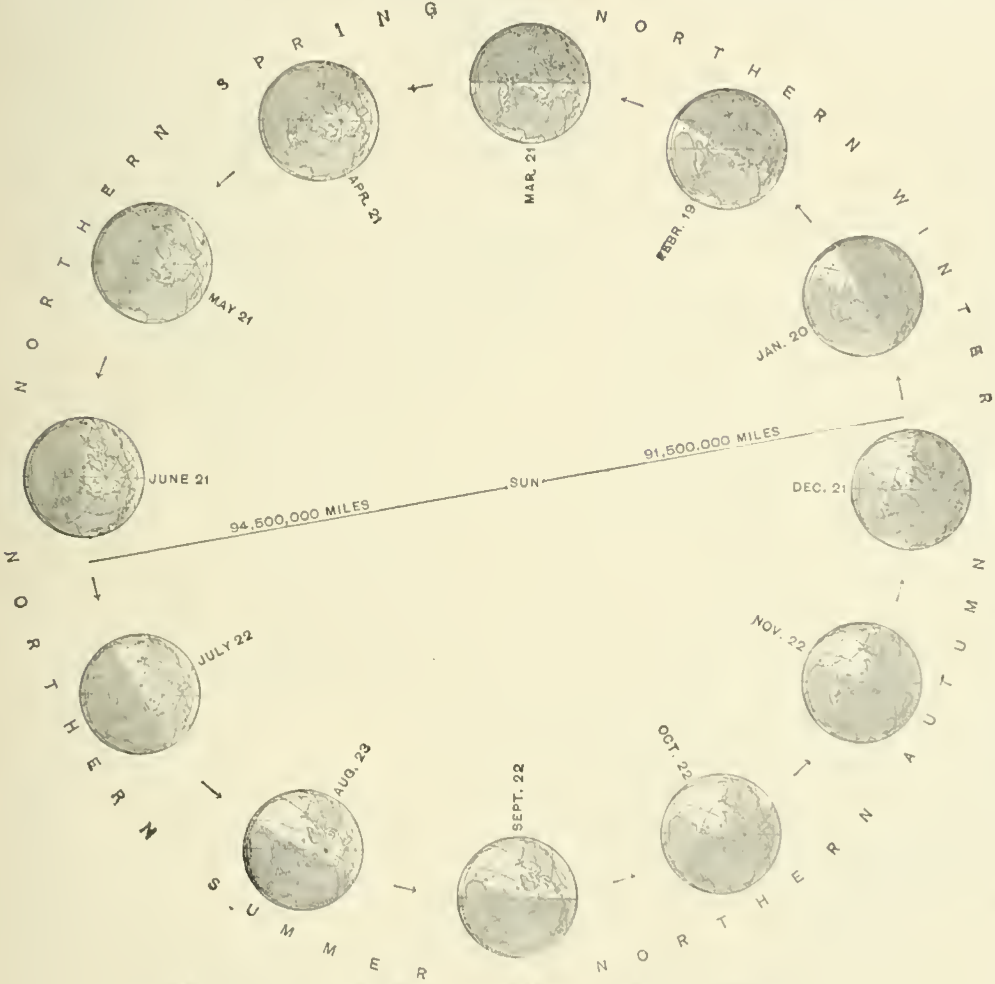


Diagram showing the position of the Earth in its Orbit each Month.

2. The Earth's *annual motion* is its motion around the sun as a planet in 365¼ days.

Its path is called its *orbit.* The Earth's orbit is not a circle, but an ellipse. The part of the orbit of the earth nearest the sun is called *perihelion;* the part farthest from the sun is called *aphelion.* By examining the illustration on this page it will be seen that the Earth is nearest the sun in December.

We know that the Earth moves around the sun because:

(1) On September 23rd the sun rises due east at the equator, then till December 21st it rises farther and farther south, when it again begins to rise farther north until March 21st, when it is again due east. From March 21st to June 21st it rises farther and farther north, and then goes back so that on September 23rd it is again over the equator. The sun would rise in the same place every day in the year, if the Earth kept the same position.

(2) The stars gradually pass out of sight and reappear at the same period each year. This proves that the earth is changing its place in the heavens.

3. The *daily* or *diurnal motion* of the earth is its motion on its axis once in 24 hours.

As the Earth is about 25,000 miles in circumference it turns around more than 1,000 miles in an hour at the equator. The rate decreases towards the poles, because the circumference grows less towards the poles.

The diurnal motion of the earth causes *day* and *night.* The half of the earth turned towards the sun has day; the other half has night. As the earth turns, it makes the sun appear to go round in the opposite direction.

The sun could cause day and night by moving round the earth, but as the sun is about 93,000,000 miles away from the earth, on an average, it would have to travel an enormous distance every day in order to do so.

Draw a diagram to illustrate the distance the sun would have to travel daily to cause day and night, and find the distance. (The distance from the sun is the radius of the circle; circumference is 3·1416 times the diameter).

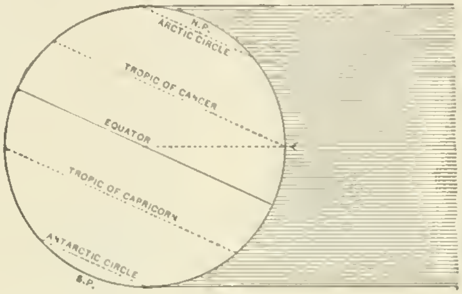


Fig. 2.

22. Result of the Earth's Annual Motion.

The annual motion of the earth around the sun causes the seasons, and the changes in the length of day and night.

The earth might move around the sun every year without causing any change in the seasons, if the axis of the earth stood perpendicular to its orbit. The axis is inclined 23½ degrees (23° 28′) from the vertical, and as it always points north and south the sun does not always shine over the equator, but shines directly overhead as far north as the tropic of Cancer, 23½ degrees north of the equator, and as far south as the tropic of Capricorn, 23½ degrees south of the equator.

EXPERIMENTS AND PROBLEMS:

1. Carry a globe around an object to represent the sun (a child may stand to represent the sun), with the axis vertical, and let the pupils decide whether any change will take place in the season or in the length of day and night. See Fig. 1. The parallel lines represent the sun's rays.

2. Carry a globe around an object representing the sun with the axis horizontal and pointing north and south all the time. Let the pupils write down the conditions regarding light and heat as they observe them at four points; when the globe is south, west, north, and east of the object representing the sun.

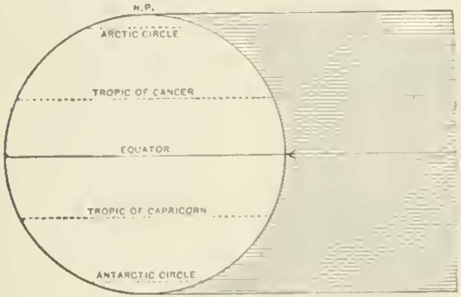


Fig. 1.

3. Carry a globe around with its axis inclined 23½ degrees from the vertical, and let the pupils write down the conditions as they observe them at the four points named in experiment 2.

4. Carry a globe around with its axis still inclined 23½ degrees, but keep the northern part of the globe turned towards the sun all the time. Let pupils write down the result as they observe it.

5. Perform No. 3 again, and draw lines to show how far north and south of the equator the sun shines directly overhead, and also to mark the limit of illumination north and south, when it is in its most northerly and most southerly positions. This will show the reason why the tropics and polar circles are marked 23½ degrees from the equator and the poles respectively. A black globe is best for these experiments.

6. Let the pupils see clearly when the northern or southern part of the globe is turned towards the sun, and the axis inclined 23½ degrees, that the part towards the sun has for a time constant day, and the other part constant night. See Figs. 2 and 3.

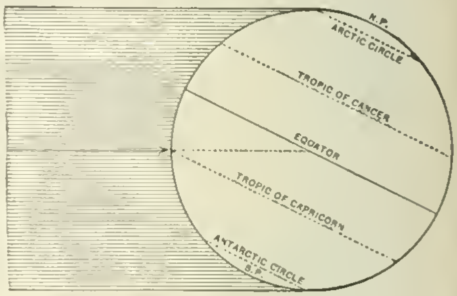


Fig. 3.

Let pupils solve the following problems. Explain that only one half the globe can be illuminated at the same time:—

1. Carry the globe around the object representing the sun, in as many different positions as possible without changing the season, or the length of day and night.

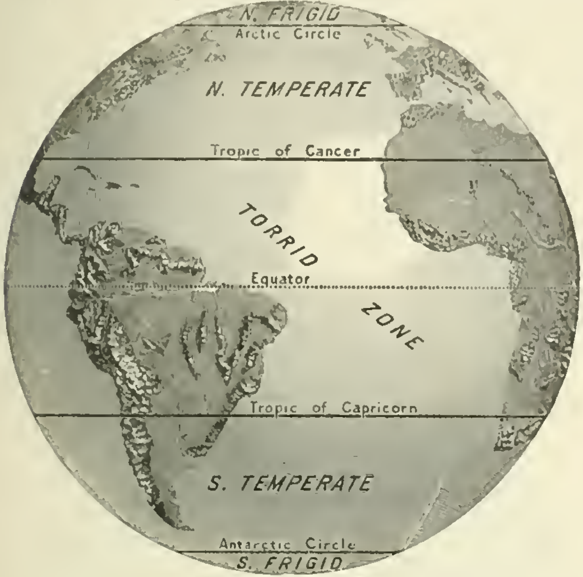
2. Carry the globe around with axis inclined 23½ degrees from the vertical, and yet cause no change in season or in length of day or night.

3. Carry the globe with the axis horizontal, and yet cause no change in season or in length of day or night.

4. Carry the globe around with the axis so inclined as to place the tropics ten degrees from the equator. Vary this question by substituting other numbers for ten.

5. If the tropics are ten degrees north and south of the equator, where will the polar circles be placed?

6. If the axis were horizontal, and always pointed north and south, where would the tropics be placed, and where would the polar circles be placed?



Map of the Zones.

NOTE.—In order to get a correct idea of the relative size of the zones from this illustration, it is necessary to remember that the point of vision is over the equator, so that the north and south appear diminished.

If these experiments and problems be performed and solved, the pupils will learn that the changes in seasons, and in the length of day and night, are caused by:—

1. The revolution of the earth around the sun.
2. The inclination of the earth's axis from the vertical.
3. The fact that the axis points always in the same direction.

23. The Zones and Climate.

The two *tropics* and the two *polar* circles divide the earth into five belts or *Zones*.

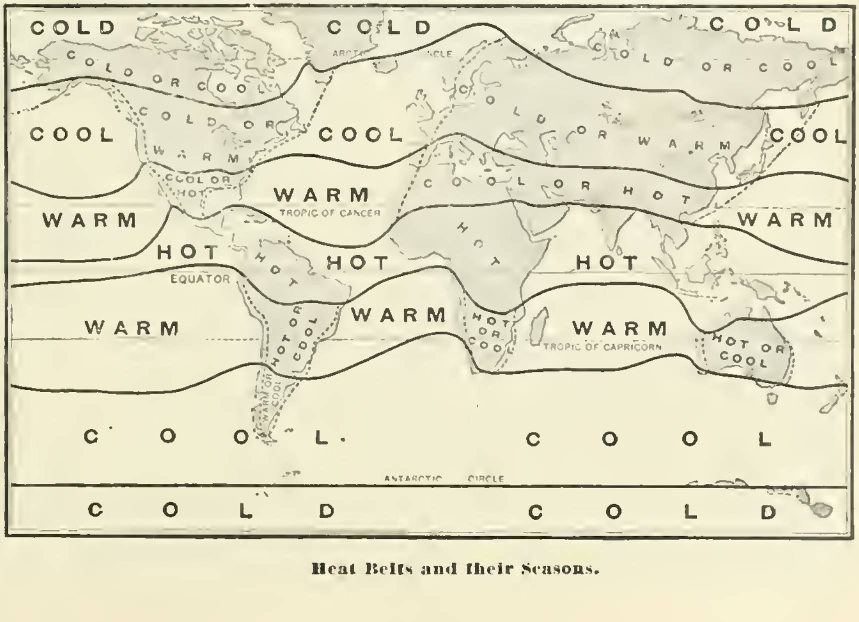
Between the tropics is the *Torrid Zone*.

Between the Tropic of Cancer and the Arctic Circle is the *North Temperate Zone*. Between the Tropic of Capricorn and the Antarctic Circle is the *South Temperate Zone*.

Between the Arctic Circle and the North Pole is the *North Frigid Zone*. Between the Antarctic Circle and the South Pole is the *South Frigid Zone*.

Speaking generally, the Zones have climates corresponding with their names. The temperature is very warm in the Torrid Zone, and very cold in the Frigid Zones. In the Temperate Zones the climate is more moderate; warm towards the Torrid Zone and cold towards the Frigid Zones. The people who have had most to do with the progress of civilization have lived in the Temperate Zones, chiefly in the North Temperate Zone.

While temperature and climate depend chiefly on the distance of a place from the equator, there are several other conditions that modify them. The height of a place has a great influence on its temperature. Even in the hottest countries the weather is delightful at a height of from three to four thousand feet, and thin ice forms at from seven to eight thousand feet above the sea, at night, in the hottest season.



Heat Belts and their Seasons.

Ocean currents modify the climate very much. The warm currents from the torrid zone flow towards the western side of the continents in the northern hemisphere. (See map of the currents, page 19).

The western part of Canada is much warmer than the eastern part at the same distance from the equator, because the west is warmed by the Pacific current from the torrid zone, and the east is cooled by the ice-laden current from the north.

Winds affect climate. Those blowing steadily from the direction of the equator make the temperature warmer, and those from the direction of the poles make it colder.

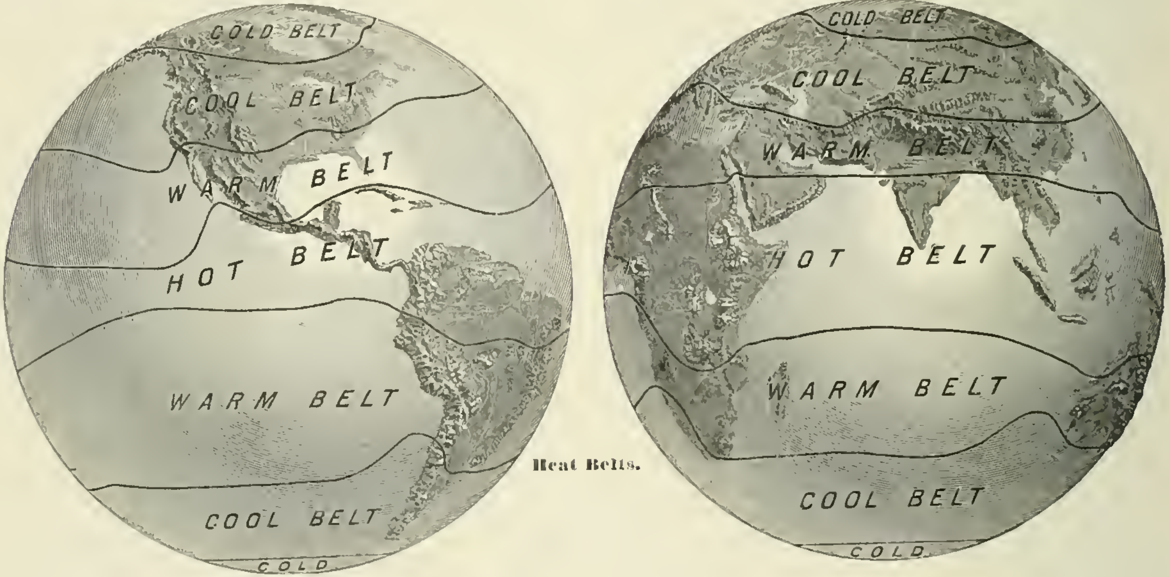
The nature of the soil has some influence upon climate.

PROBLEMS.

1. Make a large circle and divide it into Zones of proper relative width. Draw or paste on this circle the chief animals that are found in each Zone.

2. Make a circle as in question 1, and draw or paste on it the leading plants produced in each Zone.

The animals and plants may be cut from magazines, illustrated papers, or old toy books. It is interesting to have a large map of the Zones and their chief products made by the class as a whole. The Zones may be made in paper of different colors, or drawn on an unused blackboard, and the animals and plants pasted or drawn on them.



Heat Belts.

The proximity of a place to the ocean modifies its climate. The ocean does not change its temperature so rapidly as the land does, so that in summer the ocean lowers the temperature of places near it, and in winter it makes them warmer than they would be without it.

Land and sea breezes occur because the land gets warm more quickly than the ocean during the day, and cools more quickly during the night, so that the air over the ocean is cooler than the air over the land during the day, and warmer during the night. The cool air always causes a breeze in the direction of the warmer air.

Mountain ranges affect climate by interfering with the wind currents, and by preventing the free distribution of rain.

3. How many degrees are there in the part of a circle running from the North to the South Pole?

4. If the circumference of a circle contains 360 degrees, how many degrees are there between the equator and the North or South Pole? The *Equator* is an imaginary line drawn around the earth east and west midway between the two Poles.

5. What is the width of the Torrid Zone in degrees?

6. What is the width of each Temperate Zone in degrees?

7. What is the width of each Frigid Zone in degrees?

8. State the width in degrees, of the Earth's surface in the Torrid Zone, in the two Temperate Zones together, and in the two Frigid Zones.

24. Belts of Heat.

The sun is a hot globe more than a million times as large as the earth. This globe is very far away, yet it keeps the earth warm enough to support life.

If when Columbus set sail on his first voyage to America, some object could have left the sun and travelled at the rate of twenty-five miles an hour towards the earth, that object would still be several million miles away from the earth. The average distance of the earth from the sun is about 93,000,000 miles.

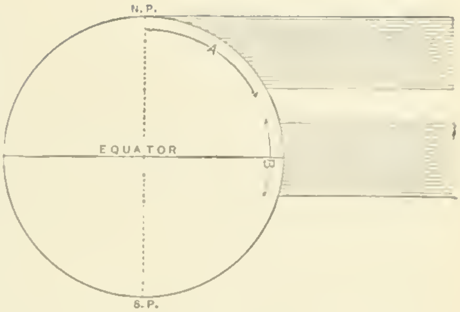
The sun's rays shine through clear air without warming it very much, but they warm the clouds and the dust in the air, and also the surface of the land and the sea. All these help to warm the air about them, but the land and the sea warm the air much more than the clouds and the dust do.

Near the equator the sun's rays are vertical, or nearly so, at noon every day. There the air is hot all the year, except high above the sea level. The region of hot air is called the *hot belt.*

Near the Equator.

Around the poles the rays are very slanting, and the air is always cold or cool. The polar regions are known as the *cold belts.*

Between the *hot belt* and the *cold belts,* there are other belts neither so hot nor so cold. On either side of the hot belt lies a belt of land and sea on which the sun's rays fall with but little slant. We call these two belts the *warm belts.*



This illustration shows how the sun shines on different parts of the earth. Over the line *B* all the rays are nearly vertical. Over the line *A* the rays strike the earth with greater slant. As many rays shine on *B* as on *A*, but the slanting rays spread over the greater surface, and therefore cannot heat it so much. The more nearly vertical the rays are the greater their heating power.

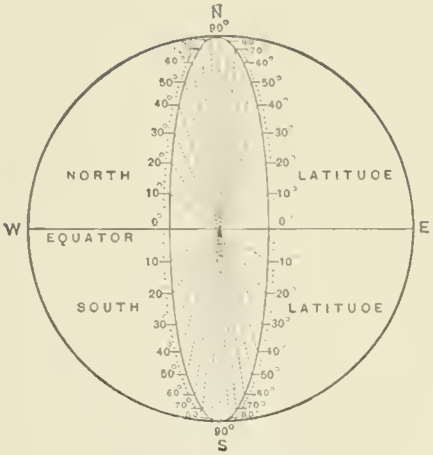
Between the warm belt and the cold belt, on each side of the equator, lies another belt on which the rays fall with a great deal of slant. These two belts are the *cool belts.*

25. Latitude and Longitude.

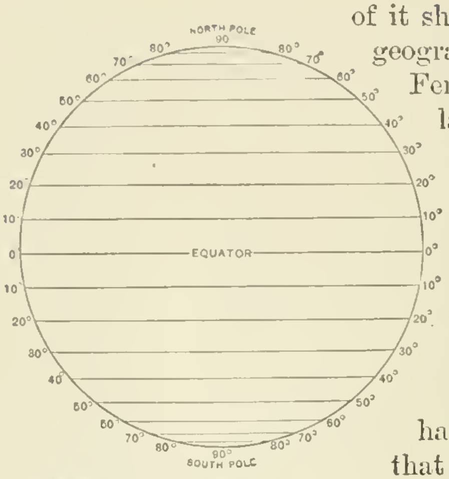
In order to be able to locate places accurately on maps and globes it is necessary to fix their distance north or south of some line and also their distance east or west of some line.

This may be shown by ruling a large square on the blackboard and asking the pupils to locate a spot in it of which you are thinking. They will realize that they cannot do so until you define the spot in some way.

Caught in an Ice Floe—Baffin Bay.



Degrees of Latitude.



Parallels of Latitude.

Draw the vertical diameter of the square and tell them the spot is six inches to the right of that line. Some may attempt to fix the exact spot now, but again they will fail, because it might be anywhere on a line six inches to the right of the diameter. Draw the other diameter and fix the point at, say, six inches to the right of the first diameter, and eight inches above the second diameter. They will then be able to locate the exact spot. In this way they will learn the necessity for two base lines to count distances from on maps and globes. They should then be trained to use the numbers at the sides and top and bottom of the maps in finding the location of places indicated by specifying their latitude and longitude.

The line from which distance north or south is measured is the *Equator*. The distance of any place north or south of the equator, is called its *Latitude*.

Lines drawn around the earth from north to south through the Poles and cutting the equator at right angles, are called *Meridians*. The meridian of any place is an imaginary line running due north and south through the place.

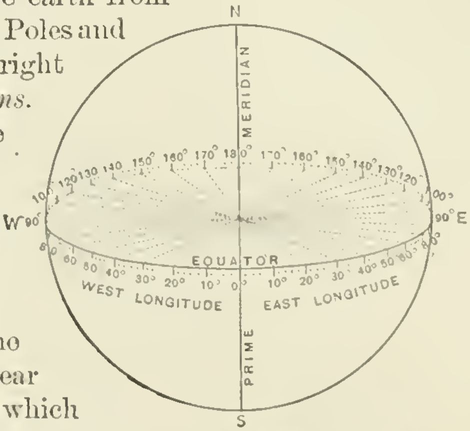
The makers of geographies in England and America usually take the Meridian of Greenwich, near London, as the line from which the distances of places east or west of it shall be measured. German geographers take the meridian of Ferro, one of the Canary Islands, as their *first meridian*, and French geographers run their first meridian through Paris.

Longitude is the distance in degrees of any place east or west of the *first meridian*.

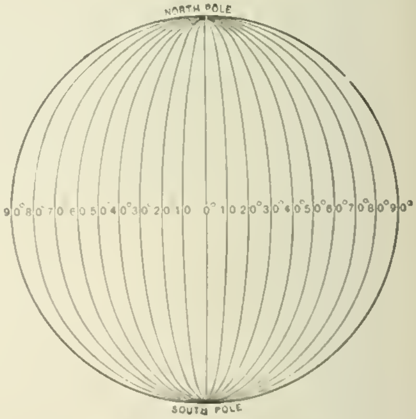
Longitude is measured half way around the earth, so that a place may be in 180 degrees east or west *longitude*.

No place can be more than 90 degrees north or south of the *equator*, and, therefore, latitude is measured only one quarter of the distance around the earth. If we were at the North Pole we should get nearer the equator, if we moved in any direction. Similarly, if we moved in any direction from the South Pole, we must be going northward, and therefore nearer the equator.

We might know that a place is situated 50 degrees north of the equator without being able to fix its location accurately. It may be anywhere on the line running around the earth 50 degrees north of the equator. But if we know that a place is 50 degrees north of the equator, and 120 degrees west of the first mer-



Degrees of Longitude.



Meridians of Longitude.

idian, we know exactly *where* to find it. This is the use of *Latitude* and *Longitude*.

PROBLEMS.

1. If one man is 180 degrees east longitude, and another is 180 degrees west longitude, how many degrees are they apart, if they are both on the equator?

The Crescent Moon.

2. In 1, how far would they be apart if one was on the equator and the other on the tropic of Cancer?

3. How many degrees are two men apart, who are on the same meridian, if one is 30 degrees north latitude, and the other 40 degrees south latitude?

4. Where would a man be if he had no latitude or longitude?

5. Where would you be if your latitude should grow less in whatever direction you walked?

6. Find the latitude and longitude of the place where you live.

7. If it takes 24 hours for the sun to pass around the whole earth, it takes it one hour to go 15 degrees, or 4 minutes to go one degree. Find the difference in time between places having 45 degrees difference in longitude.

8. What is the difference between the time of two places, one of which is in 25 degrees west longitude, and the other in 32 degrees west longitude?

9. What is the difference between the time of two places, both 50 degrees west longitude, if one is 20 degrees north latitude, and the other 22 degrees south latitude?

10. What is the longitude of a place whose time is 3½ hours slower than the time of a place in 25 degrees east longitude?

When we stand at the equator, the North Star is in our horizon. When we go north, the North Star ascends degree by degree, as we get away from the equator. The height of the North Star in degrees tells us our latitude.

11. Why is there is a difference between sun-time and standard time in most places?

12. Some children have to go to school earlier and some later than formerly, on account of the use of standard time. Explain this.

26. Phases of the Moon.

The moon is a dark body. The light that shines from it is reflected light that comes from the sun. When the moon is directly between the earth and the sun the bright side of the moon is turned away from us, so that we say there is "no moon." When it moves on a little we can see the edge of the bright half of the moon and we say there is a "new moon." When it has moved to the side of the earth away from the sun, we can see the whole of the bright half of the moon, and we call this "full moon."

The moon moves around the earth in a little less than a month, and so we have "new" and "full" moon thirteen times a year.

The earth and moon may be drawn on the blackboard in the four positions, as at new moon, full moon, and the quarters. Assuming that the sunlight comes from the right or left the proper half of the moon may be drawn in white, and with the earth in the centre the pupils can see the portion of the bright side that is visible from the earth in each case.

Experiment: Take a small black globe and make one half of it white with chalk. Carry it around the class keeping the white side always in the same direction, towards the place where the sun is supposed to be. Let the pupils write down the conditions they observe at the four leading points in the moon's orbit.

Note: A football, or a pumpkin, may be used instead of a globe. Pupils may be trained to make globes by pasting paper properly cut. These are very useful, if one half is made of white paper and the other half of black paper.

1. At what time of the day does the moon rise, at "full" moon?

2. In what part of the heavens is the "new" moon always seen?

3. Do the horns of the "new" moon point in the same direction as the horns of the "old" moon.

Map of the Moon.

PLANTS.

1. Can you name two plants that thrive in wet soil? Two that thrive in sandy soil?

2. Where do water lilies grow? Do you know where pussy willows are found?

3. What flowers have you seen growing in the woods?

4. What flowers grow best in the open fields?

5. Compare the growth of the same flowers in the woods and in open places.

6. Of what use are long roots to trees? Would short roots be as useful?

7. Try to find a plant growing on the bark of some tree; on stones; on fences; on the roofs of old houses.

8. Name two trees that drop their leaves in autumn. Name two that hold their leaves all winter. When do cone-bearing trees drop their leaves?

9. Of what use is the tuft on the thistle seed?

10. Name as many plants as you can that have winged seeds, and others that have hooked seeds. Which of these kinds of seeds grow on trees? Why?

11. Do you know of any seeds that are blown about because they are so light?

12. Try to find a seed that will float on the water. How might that seed be carried from one place to another?

13. Name some birds that feed on seeds; on fruits.

14. In what ways may seeds scatter over level land? How may they be carried over high land? Across rivers?

15. Name two plants that yield fibres from which cloth is made. Name three plants that are used in making medicine.

16. Name an enemy of each of these plants: potato, tomato, wheat, apple.

17. What is tar? What is India rubber?

Note.—Study the maps of the Heat Belts and their Seasons on pages 23 and 24, and learn what countries are in the Hot belt, the Warm belts, the Cool belts, and the Cold belts.

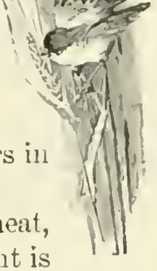
1. Soil, Water and Heat.

Plants cannot live in every place where their seeds may fall, but only where the soil, heat and moisture are suited to their growth.

Some plants need a longer hot season than others in order to ripen their seeds.

Plants are not found in all places where the soil, heat, and moisture are suited to their growth. If the plant is not native to the place, its seeds or the plant itself must first be taken there.

When white people first settled in America they found here neither wheat nor cotton. After a time the seeds were brought across the ocean, and now these plants are among the most valuable in the New World. Most of our grains and fruits are natives of other lands.



2. Plants of the Hot Belt.

The torrid belt is often called the *belt of palms*, because so many palm trees thrive in it. Among these is the useful cocoa palm.

Some palm trees produce dates. These are the chief article of food of many desert tribes. Other palms yield wax, oil, sago and wine.

India rubber is made from the sap of many kinds of trees and vines that grow in the hot belt. Many dye-woods are also found there. Among the trees of the hot belt yielding valuable wood are ebony, rosewood and mahogany. Another useful product of the hot belt is bamboo. This is a very strong, coarse, grass-like plant, growing to the height of sixty or seventy feet.

In India, China and the East Indies entire huts with their furniture are made of bamboo. Its seeds and tender shoots are served as food, on dishes cut from its tough joints. Other parts of this plant are used in making baskets, paper, ropes, boats, cloth and weapons.

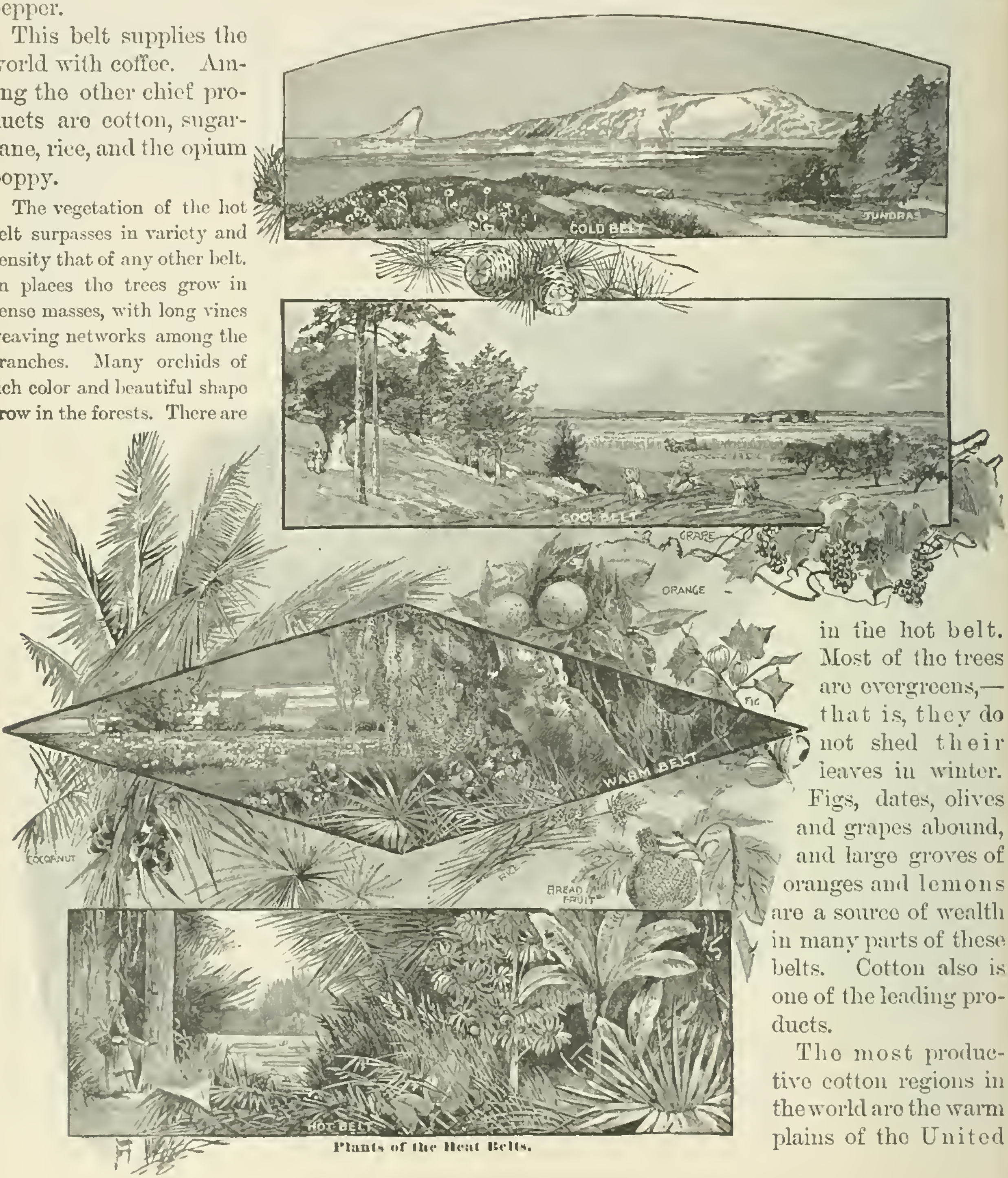
Among the chief articles of food of people in the hot belt are bananas, plantains and breadfruit. Bananas and plantains are very much alike,—the latter being slightly the coarser.

Breadfruit grows to about the size of a child's head. The fruit is often baked, and sometimes it is ground to flour after being baked. On many islands in the Pacific, bananas and breadfruit are almost the only food of the natives.

The East Indies and many other parts of the hot belt are very rich in spices. There are found the sweet-scented kernels of nutmeg, the biting flower-buds of the clove, the fragrant bark of the cinnamon, the hot root-stock of the ginger, and the stinging, dried berries of the pepper.

This belt supplies the world with coffee. Among the other chief products are cotton, sugar-cane, rice, and the opium poppy.

The vegetation of the hot belt surpasses in variety and density that of any other belt. In places the trees grow in dense masses, with long vines weaving networks among the branches. Many orchids of rich color and beautiful shape grow in the forests. There are also tree ferns, huge lilies and countless other plants which we see only in hothouses.



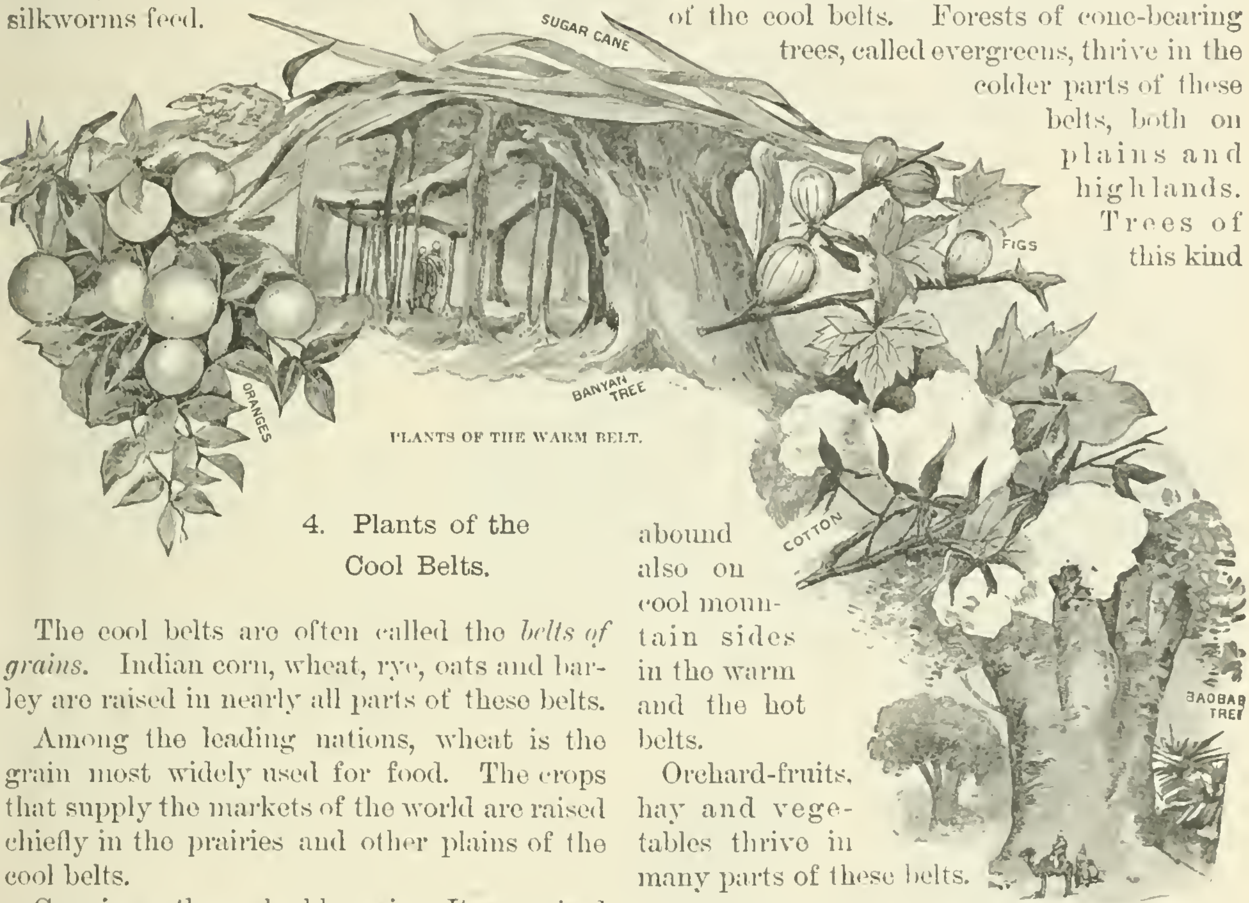
Plants of the Heat Belts.

3. Plants of the Warm Belts.

The plants of the warm belts resemble those in the hot belt. Most of the trees are evergreens,—that is, they do not shed their leaves in winter. Figs, dates, olives and grapes abound, and large groves of oranges and lemons are a source of wealth in many parts of these belts. Cotton also is one of the leading products.

The most productive cotton regions in the world are the warm plains of the United

States, India and Egypt. Nearly all kinds of grain thrive in parts of the warm belts. Among the other valuable plants are tea, sugar-cane, sweet-potato, and tobacco. Most of the tea comes from south-east Asia. There is also found the teak tree, which supplies valuable lumber, and the mulberry, upon whose leaves silkworms feed.



PLANTS OF THE WARM BELT.

4. Plants of the Cool Belts.

The cool belts are often called the *belts of grains*. Indian corn, wheat, rye, oats and barley are raised in nearly all parts of these belts.

Among the leading nations, wheat is the grain most widely used for food. The crops that supply the markets of the world are raised chiefly in the prairies and other plains of the cool belts.

Corn is another valuable grain. It was raised by the Indians long before the white man came to this country. Corn is a rapid grower and is wide-spread over the cool belts and the lands still nearer the equator. This grain is better suited to the prairies having hot summers, than to the British Isles with their mild weather lasting nearly all the year.

Rye, oats and barley are hardy grains and thrive in most parts of the cool belts.

Barley is perhaps the most wide-spread of grains. It grows both upon the Arctic shore of Norway and in the valley of the upper Nile, not far from the equator.

Flax and hemp thrive in the cool belts. Next to cotton, flax is the most valuable of the fibre plants.

Many hard-wood trees, such as the oak, maple and walnut, grow in the warmer parts of the cool belts. Forests of cone-bearing trees, called evergreens, thrive in the colder parts of these belts, both on plains and highlands. Trees of this kind abound also on cool mountain sides in the warm and the hot belts.

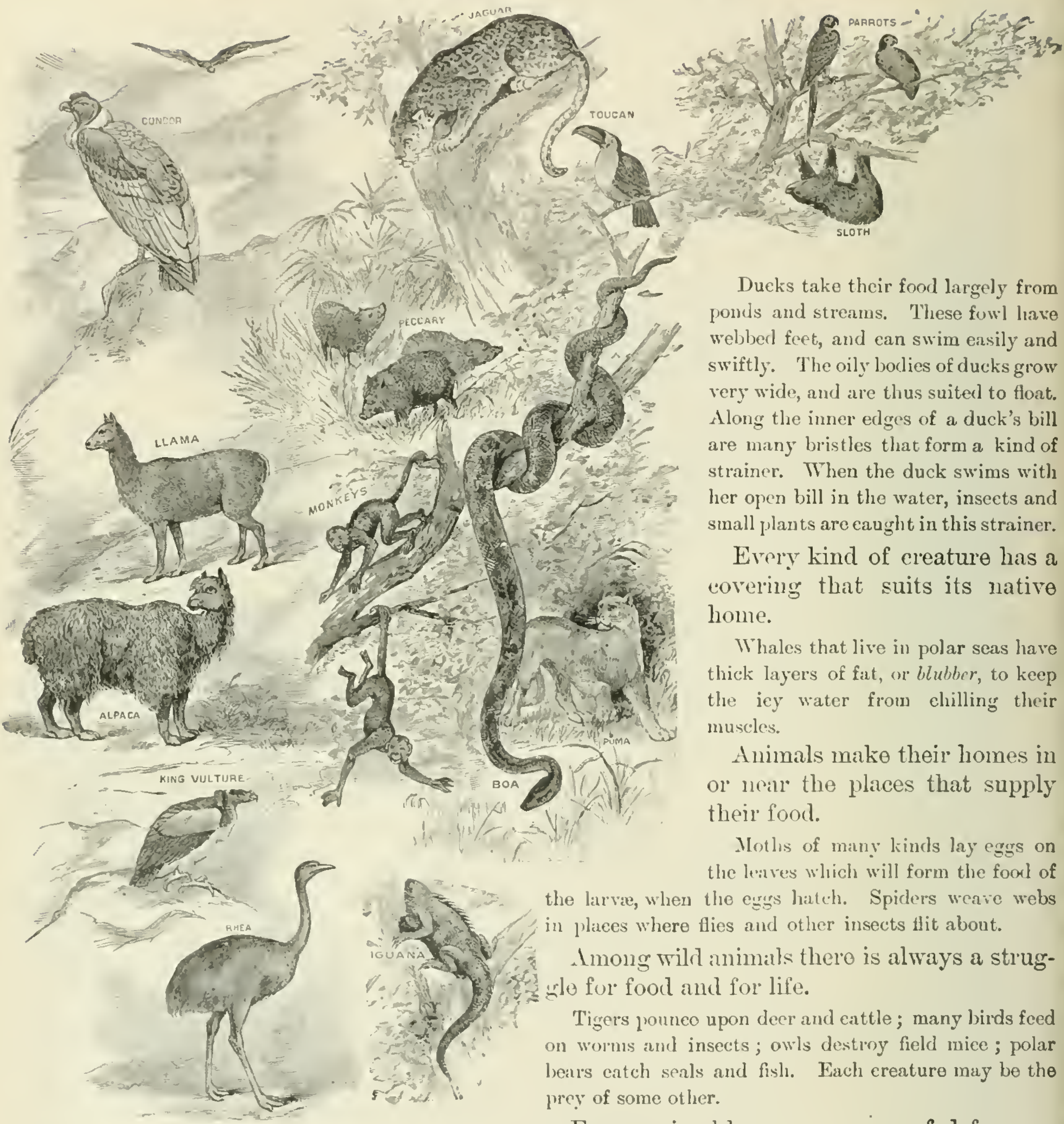
Orchard-fruits, hay and vegetables thrive in many parts of these belts.

5. Plants of the Northern Cold Belt.

Some kinds of pine, spruce, birch, willow and other hardy trees grow in the warmer parts of the northern cold belt. Northward the trees become fewer and smaller, ending with dwarf birches and willows, only a few inches in height, on the dreary plains near the Arctic shore. There in the cold, marshy *tundras*, are also found mosses, lichens and stunted shrubs.

Very little is known about the islands in the icy sea around the South Pole.

The cold belts have very short summers.



ANIMALS.

1. Animals and their Homes.

Every kind of creature grows to suit its native haunts. By its teeth, feet, and other parts of its body, every animal is fitted to seize and devour its proper food.

Ducks take their food largely from ponds and streams. These fowl have webbed feet, and can swim easily and swiftly. The oily bodies of ducks grow very wide, and are thus suited to float. Along the inner edges of a duck's bill are many bristles that form a kind of strainer. When the duck swims with her open bill in the water, insects and small plants are caught in this strainer.

Every kind of creature has a covering that suits its native home.

Whales that live in polar seas have thick layers of fat, or *blubber*, to keep the icy water from chilling their muscles.

Animals make their homes in or near the places that supply their food.

Moths of many kinds lay eggs on the leaves which will form the food of the larvæ, when the eggs hatch. Spiders weave webs in places where flies and other insects flit about.

Among wild animals there is always a struggle for food and for life.

Tigers pounce upon deer and cattle; many birds feed on worms and insects; owls destroy field mice; polar bears catch seals and fish. Each creature may be the prey of some other.

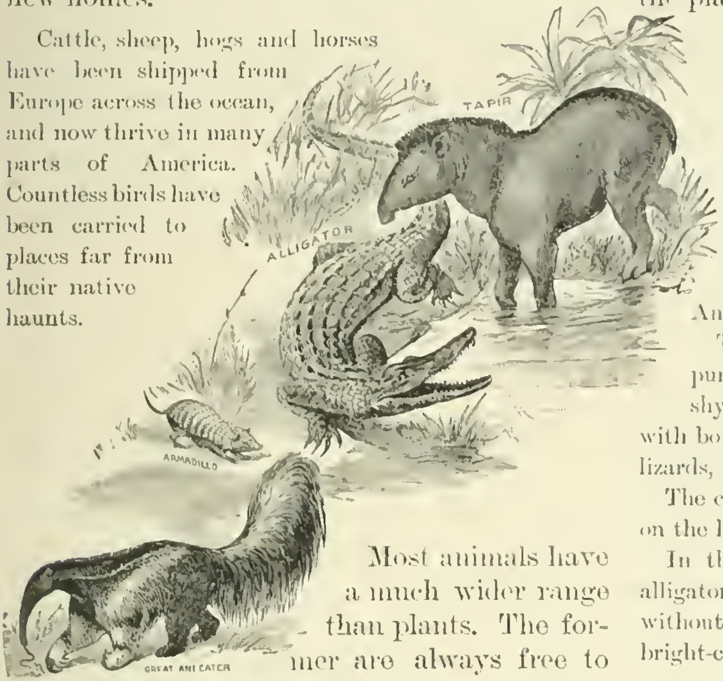
Every animal has some means of defense or escape.

The chamois leaps from crag to crag; the rattlesnake strikes with poison fangs; the deer runs swiftly; the frog dives into water; the ostrich kicks and runs.

Nearly all animals have power to move about and seek new homes. There are places that animals cannot cross. They may be swift and strong, but they cannot live in regions that do not supply their food.

Many animals have been taken by man to new homes.

Cattle, sheep, hogs and horses have been shipped from Europe across the ocean, and now thrive in many parts of America. Countless birds have been carried to places far from their native haunts.



Most animals have a much wider range than plants. The former are always free to move from place to place as the seasons change or as periods of drouth come on. The chief barriers to their travel are oceans, deserts and highlands. These features divide the earth into great *realms*, each having some groups of animals that differ from those of the other realms. Many kinds of animals in each realm are also found in other realms, for some can cross places that are barriers to others.

2. South American Realm.

This realm includes South America, Central America, and the West Indies. It reaches from the plateau of Mexico to Cape Horn.

Among the animals of the Andes highland are the llama and alpaca.

Two other kinds of animals in South America resemble the llama. One of these, the vicuña, has fine wool and is kept in flocks. The other, called the guanaco, is hunted by Indians on the plains southward from the pampas.

The large running bird known as the *rhea*, or American ostrich, is found in the same region.

Two large cat-like animals, the jaguar and the puma or panther, are also found here. So are the shy tapirs, the sharp-clawed ant-eaters, armadillos with bony armor, shaggy sloths, harmless iguanas or lizards, huge boas and fierce peccaries.

The condor, largest of flying birds, may often be seen on the high peaks of the Andes.

In the forest and along the streams may be seen alligators, monkeys, parrots, toucans and other creatures without number. Brazil is the home of swarms of bright-colored insects.

3. Northern Realm.

The Northern realm embraces all the lands extending northward from the plateau of Mexico, from the desert of Sahara and from the Himalaya mountains.

The grizzly bear of the Rocky mountains, the black bear of the forest regions, and the polar or white bear of the Arctic regions are found in many parts of the Northern realm.

Among the animals which make their home in the highlands of this realm are the bighorn, or Rocky mountain sheep, the chamois and the ibex of the Alps, the Kashmir goat and the yak of Tibet.

Millions of fur-bearing animals live in the great pine-forest belt of the north, both in America and Eurasia.

The forest belt of the north is the home of the elk. This animal is noted for its speed and for its broad flat antlers. The American elk is called the *moose*. It is the largest of the deer family.

The reindeer also belongs in the cold regions both of America and the Old World.

The American reindeer on the mainland is called the *caribou*. Reindeer range northward to within less than a thousand miles of the pole.

The milk and the flesh of reindeer are used for food. Warm clothing is made from the skins. On the bleak slopes of the Old World many a man's wealth is counted in reindeer.

The walrus is a large animal of the seal family, and lives along the Arctic coasts. The walrus has strong ivory tusks that it uses to defend itself and to dig shell-fish from the bottoms of bays. It is killed for its oil, ivory, hide and coarse flesh. Seals feed chiefly on fish that they catch with their sharp claws. They swim with great speed but are clumsy on the land. Some seals are valued for their fine fur. Many of these are killed on the Pribilof islands in Behring sea. Seals form a large part of the food of the Eskimos. Among the sea fowl which visit the Arctic shores in summer, to feed and to hatch their young, are eider ducks, geese and auks.

4. African Realm.

The African realm includes the peninsula of Arabia, and all Africa, except the region north of the Sahara desert.

This realm is the home of many man-like apes. Among these the fierce gorilla holds first place for size and strength.

This species of ape is found near the west coast of Africa, not far from the equator.

The chimpanzee lives in about the same region as the gorilla and also far inland near the upper Nile. Many other apes and monkeys are found in nearly all parts of Africa.

The vast barren tracts in this realm are the home of the camel.

One species of elephant is found in Africa. Each year thousands of these beasts are killed for their ivory tusks.

The lion and the leopard live in many parts of this realm. They prowl about the places in which they can pounce upon deer and other animals. Among the huge creatures that abound in this realm are the thick-skinned rhinoceros with horned nose, the tall giraffe with long neck, the giant ostrich with fine plumes, and the dreaded crocodile with scaly armor.

The tsetse fly is about as large as the house fly and has almost the same colors as the honey bee. The home of this insect is in parts of central and south Africa. The sting of the tsetse fly is fatal to cattle, horses and dogs, but harmless to man

The Cape buffalo is found in the southern half of Africa.

In south and east Africa there are two kinds of animals related to the common horse. These are the zebra and the quagga. They are hard to tame and are of but little use to man.

5. Oriental Realm.

The Oriental realm lies southward from the Himalaya and Nanling ranges. *See map of Asia.* This realm extends almost to Papua and Australia.

The orang-outan, one of the great man-like apes, is a native of Borneo and Sumatra.

The most useful animals in this realm are the zebu and the buffalo. These are found in nearly all parts of southeast Asia and have spread westward into Africa. Zebus are a kind of cattle with a hump upon their shoulders, used for riding, ploughing, drawing carts and doing other kinds of work.

The true buffalo of India is often found wild. Tame buffaloes are useful beasts of burden.

There are both wild and tame elephants in this realm. Many of

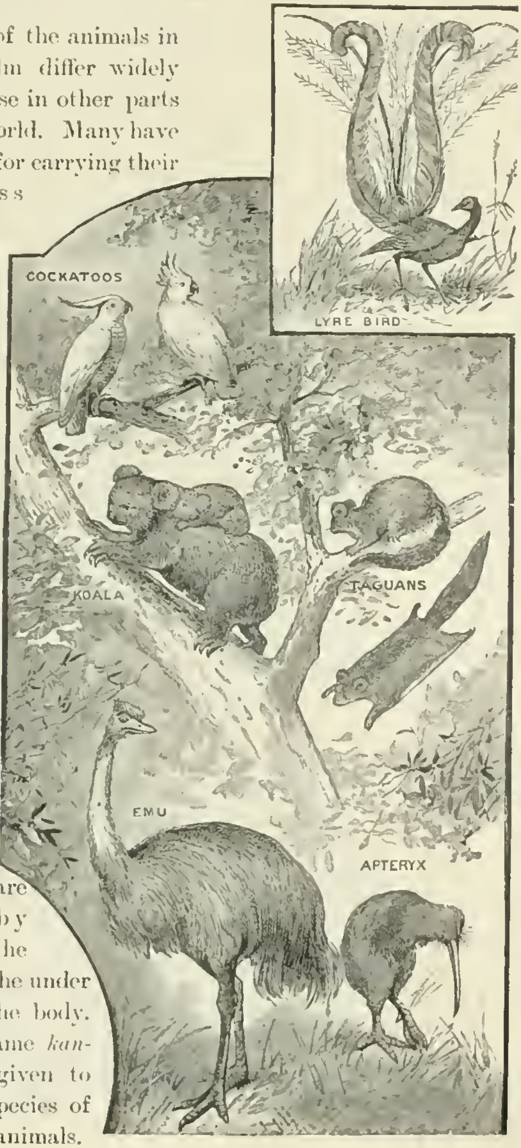
these huge beasts are trained to work, but the cost of feeding them is very great, and their places are to a large extent being taken by horses.

Large crocodiles, called *gavials*, infest the Ganges delta and the lower parts of many streams in this realm. Gavials are of service to man, for they devour the bodies of animals which float down the streams.

6. Australian Realm.

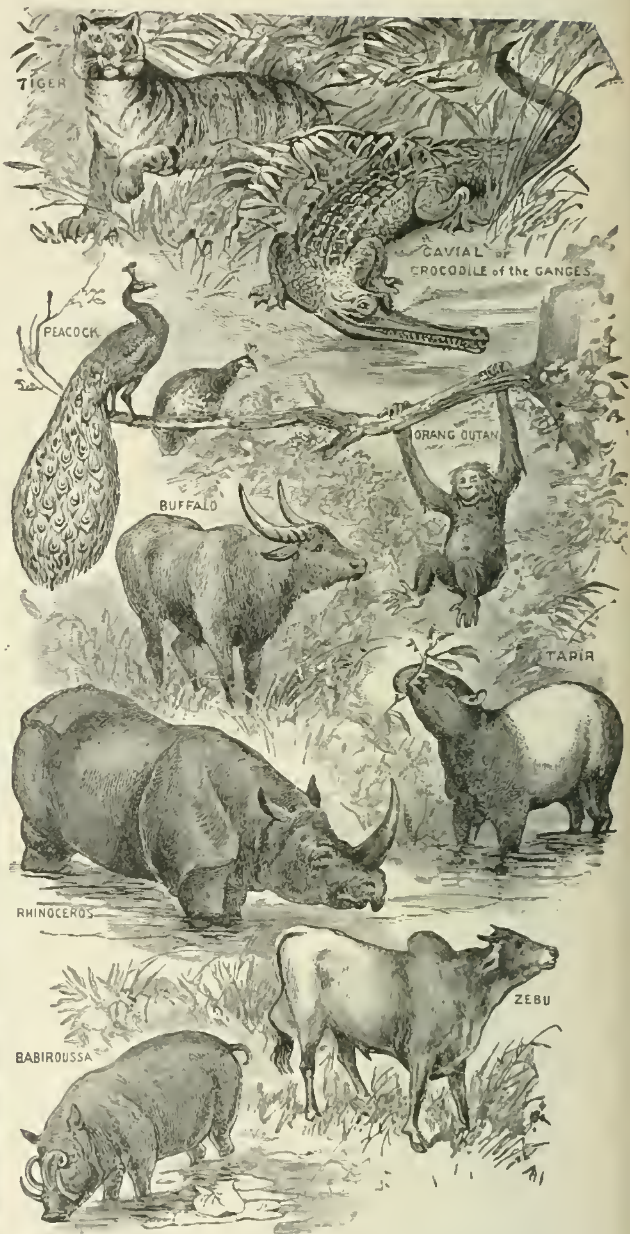
The Australian realm includes Australia, Papua, New Zealand, and many groups of small islands in the Pacific ocean.

Most of the animals in this realm differ widely from those in other parts of the world. Many have pouches for carrying their helpless young.



These pouches are made by folds in the skin on the under side of the body.

The name *kangaroo* is given to several species of pouched animals.



The Australian realm abounds in black swans, lyre birds, parrots, brush turkeys, pigeons, ducks, geese and other kinds of birds.

Sheep and cattle are not native to Australia, but are now counted there in millions.

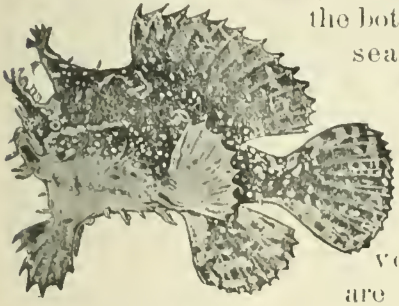
The chief grazing regions are near the eastern ranges of the continent.

The emu is related to the ostrich.

The apteryx of New Zealand belongs to the same order of birds as the emu, the ostrich and the rhea.

7. The Bottom of the Sea.

In some places there are very long and wide banks under the sea. The tops of many ranges and ridges also rise above the water and form islands.

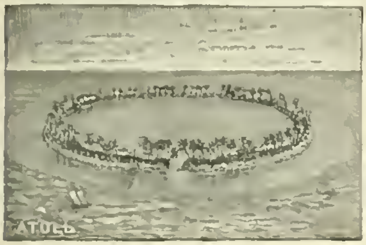


A Spiny Fish.

Many volcanoes rest upon the bottom of the deep sea. Their peaks form hundreds of lonely islands, far out in the ocean. Most of these volcanic islands are in the Pacific ocean.

By far the greater part of the bottom of the sea is a vast smooth plain.

Sunlight does not go very far down in the sea. If we were to sink in this great body of water, we should find the light growing fainter as we went deeper. At less than one fourth of a mile below the surface, the ocean is always in darkness. In some places the water is five miles in depth.



Coral Island.

Near the surface of the sea, and on the bottom, there are many kinds of fish and other creatures. At times the shallow water near the shores of the continents seems to be alive with fishes.

The pictures on this page show a coral island and also some of the forms of life found on the bottom of the sea, — such as sponges, corals and fish.

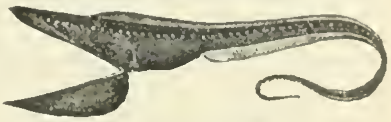
8. Coral Islands.

Many pretty islands grow in in the sea, especially in the warm portion of the Pacific ocean. They are called coral islands. When they are growing they look like branches of trees. There are tiny soft spots on the sides and ends of the branches.

Sponge.

This is one of the wonders of the sea. Each soft spot is a living body. It has a mouth and a stomach, and takes its food from the water.

This tiny creature is called a *polyp*, and the hard part is *coral*. The coral is part of the body of the polyp. Some polyps grow like trees, and send out buds that form branches. The polyps on the branches bud again, and thus a dense coral forest grows.

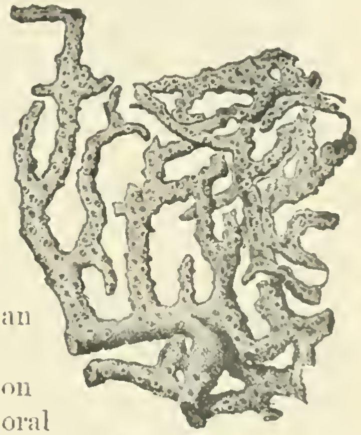


Deep Sea Fish.

Polyps lay tiny eggs in the water, and the eggs float about. If they reach a rocky bank or a hard bottom where the water is shallow, clear and warm, they start another forest of coral.

When the coral has grown nearly to the surface of the sea, waves break off many branches and wash them on to the top of the coral mass. Each storm sends up more, till the bank rises above the water and forms an island.

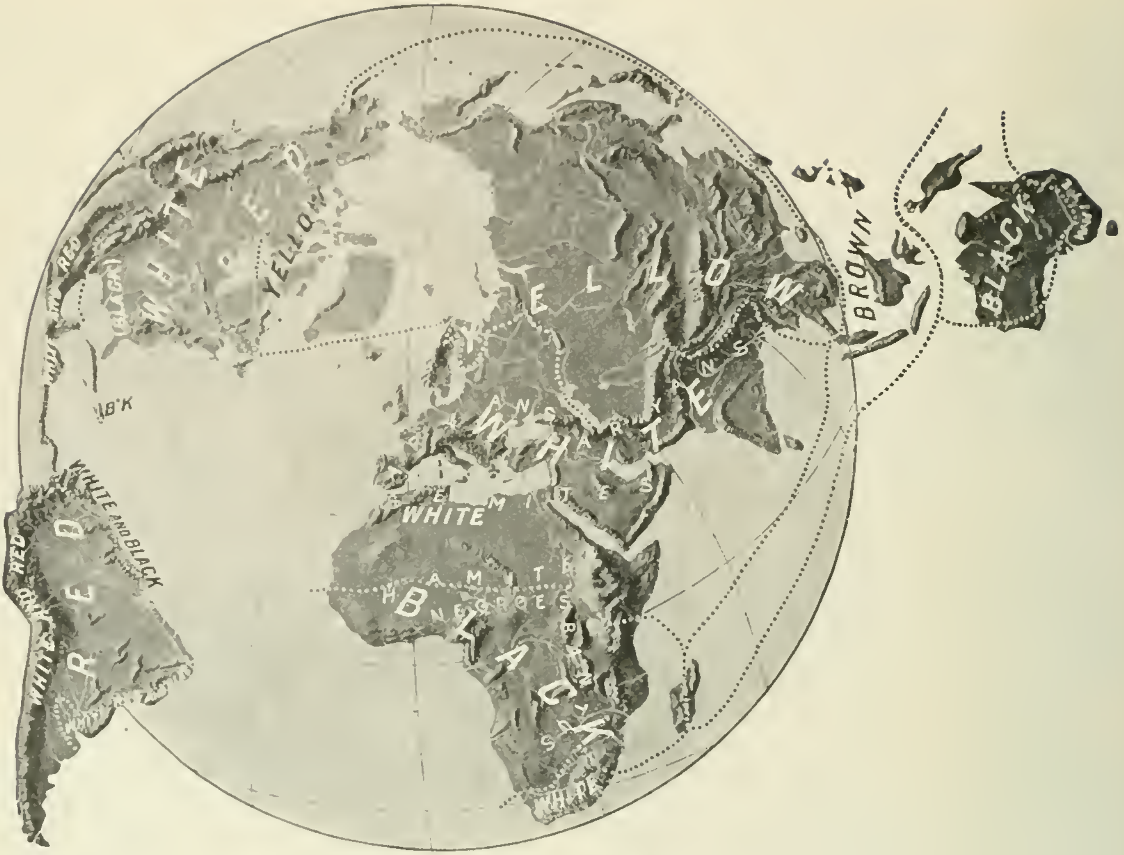
The waves soon grind some of the coral to powder. Sea-plants drift to the new shore and mix with the coral dust. Soil is thus formed on the island.



Branching Coral.

Fine seeds are carried many miles by winds in storms. Other seeds drift with the sea from shore to shore. In some such ways seeds reach the new island, and grow to trees or smaller plants. In time the coral island is ready for man to come and make it his home.

There are many kinds of coral, forming many pretty shapes.



RACES OF MEN.

The people in various parts of the earth do not all look alike, do not eat the same kinds of food, do not wear the same styles of clothing, nor live in the same kinds of houses.

The people of the earth are divided into five groups, or *races*. The people of one race differ from those of the other races in color, in size, in the shape of their skulls, in kinds of hair, in language, and in other respects.

It will be very interesting to see the different homes, and the varied kinds of costumes worn by people in different parts of the world.

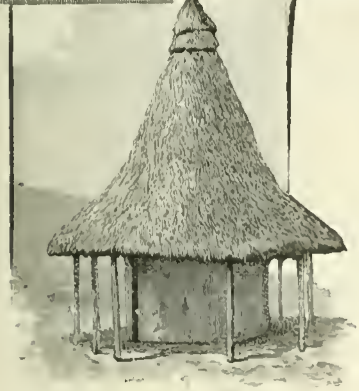
In some places we shall find that people of two or more races live side by side, but certain lands are known as the home of each race. Thus, America is the home of the Indian, or red-brown race. Most of the brown people are found on islands southeast of Asia. The north and east slopes from the Asian Highland are the home of the yellow race.

The home of each race is bounded on nearly all sides by oceans, deserts or lofty highlands. The desert of Sahara lies between lands of the black and the white races. The Himalaya mountains separate homes of yellow and of white people. The land of the Indian is bounded on all sides by the sea.

No race is now limited to its original home, for the people of each race have spread more or less into the lands of other races. Thus, white people are now found in nearly all settled parts of the earth.

There are about 1,500,000,000 people in the world.

Carrying Ivory to the Coast.



1. The Negro or Black Race.

The natives of middle and southern Africa vary in color from black to brown. Most of them have broad flat noses; thick, protruding lips, and short, black, frizzly hair.

The true negroes are found in nearly all parts of Sudan, but the people in the tribes southward from Sudan to the Cape of Good Hope also belong to the Negro race.

Many of the people of Brazil, the West Indies, and the southern plains of the United States, are freed descendants of African slaves.

The black natives of Australia are classed with the negro race. Their color is dusky brown, and their hair is curly.

The number of Australians is small, compared with the number of white people who now live in that continent. There are only about thirty thousand in all the tribes. These are thinly scattered around the continent, chiefly within about two hundred miles of the coast. The Australians are savages of a very low grade.

The savages of Papua or New Guinea belong to the black race.

Millions of black people have been taken from their homes in Africa and sold as slaves, but the slave trade has now been almost stopped. The climate of their native land fitted the Negroes to work in the low and hot regions of the earth.

The number of people in the black race is about 150,000,000,—one-tenth of the people on the earth.

The picture on this page shows a company of people in Africa near the great river Kongo, south of the desert of Sahara. Ivory is one of the chief products of this country.

Look carefully at the tall house. This is the kind of a house the boys and girls of the Kongo country live in. When a man builds a house, he first breaks off many strong reeds and sets them in the ground in a circle. Then he ties them together with long grasses, and fastens bunches of grass all over them for a roof. He leaves a doorway, but no windows. He makes no chimney because the fires are always built out of doors.

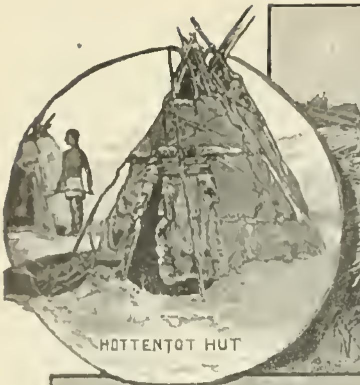
Little boys in Kongo have to watch the corn fields to keep away baboons and other animals, with little bows and arrows.

When they come home they get a good supper of eggs, fish, and corn porridge. The girls help their mothers to pound corn between stones for the porridge, and assist in making cloth from long strips of bark soaked in water and then pounded till they are very soft.

Everybody goes to bed at dark, for there are no lamps.

Negro children are very fond of music.

Buffalo of Egypt.



HOTTENTOT HUT

Kaffir Huts.

Kaffir Girl and Baby.

Many tribes called Kaffirs live in Southern Africa. They all belong to the black race, although their color varies from red-brown to black. They make garden tools and weapons of copper and iron. They have herds of cattle and raise large crops of corn. Milk and corn are their chief articles of food.

The Hottentots too live in Southern Africa. They are usually very small men. They move about from place to place in search of grass for their cattle and sheep. This is the reason they have huts like the one in the picture. The Hottentot women do all the hard work about home. The people use sheepskins wrapped about the body for clothes.

2. The American or Red Race.

Formerly, the Indians lived in every part of America. Now the white man has taken their hunting grounds and there are not many Indians left. In North America they live chiefly in Mexico, Central America, the western part of the United States, and the north western portion of Canada. Most of them live in tents, although in Ontario many of the Six Nation Indians have fine farms and live in good houses.

In Canada nearly all the Indians are upon *reservations.* These are large tracts of land set apart as homes for the tribes.

Most of the Indians have high cheek-bones and straight, black hair. Their skin is reddish-brown or copper color.

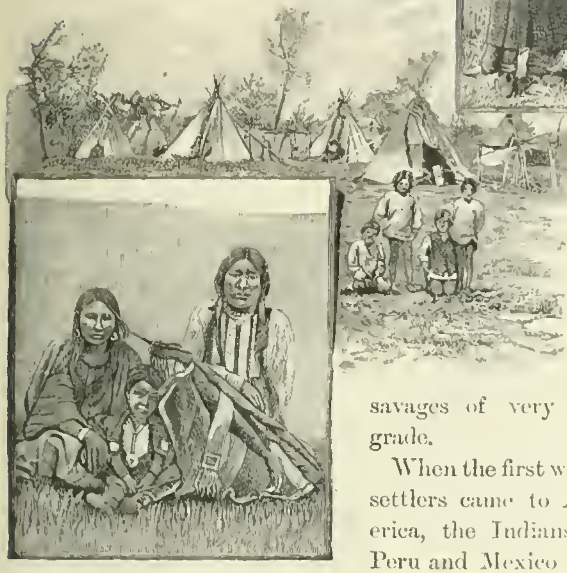
Some tribes of Indians still live in tents. Others build *pueblos*—houses or villages made of sun-dried bricks or of stone.

The native weapons are the bow and arrow and the tomahawk, or hatchet. The Indians shoot the arrow and throw the tomahawk with great skill. Many are now skilful with rifles.

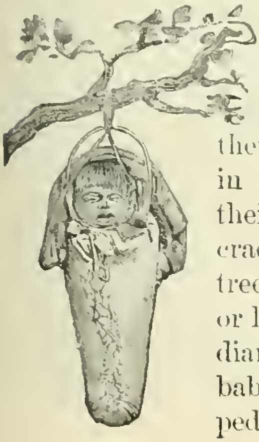
Young Indian Chief.

The Indians had no horses before the Europeans came to America, but most of the savages are now excellent riders.

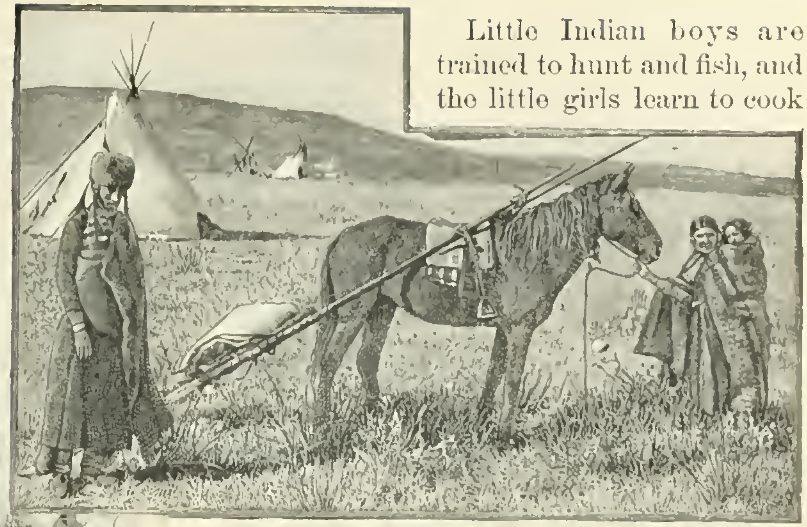
In all the countries of South America the races are greatly mixed. Most of the white people live near the coasts, but there, as well as farther inland, are found several million Indians. Those of the interior are savages of very low grade.



When the first white settlers came to America, the Indians of Peru and Mexico had temples and other buildings of stone. They made cloth, and worked in copper and gold, but the use of iron was not known to them. They built good roads and bridges. These people had made more progress than any others in the red race.



Indian babies have strange cradles. They are made of boards with cloth wrapped around them. The babies are tied in them with the boards at their backs, and then the cradles are tied to branches of trees, or placed against walls, or leaned against trees. Indian mothers carry their babies in their cradles strapped on their backs.



Indians and their Camps.

Little Indian boys are trained to hunt and fish, and the little girls learn to cook and work in the garden. They take down the tents and put them up again when their camps are moved.

Indians live in tribes, and obey the chief or head of their tribe. They are fond of dancing and other amusements. Some of their dances are religious ceremonies. They used to have strange, wild dances before they went to war. You may see a picture of their sun dance on page 67.

The game of lacrosse was first played by the Indians. They played it with a stick with a bag at the end of it.

The term Indian is a mistake, as the "Red Men" have no connection with India or the Hindus.

The American or red race includes only about one-twelfth as many people as the black race. Most of the Indians live in the torrid zone. They are gradually dying off.

Fiji Islanders.

3. The Malay or Brown Race.

The Brown people live mostly on islands, but their home includes also the Malay peninsula. Borneo, Sumatra, Madagascar and Java are the most important Islands peopled by the brown race, but the region includes countless islands that extend for thousands of miles out into the Pacific.

A Malay Girl.

Java is a land of flowers and fruit. It is so beautiful that it is called the "Pearl of the East." The house in the picture is made of bamboo.

A Malay Home.

A Java Girl.

The little girl helps her mother in the house. She makes pillows with soft white down that grows on a tree near by, and weaves dry grass into mats that are used as beds.

Her brother pounds the rice for breakfast to take off the yellow hulls, and gathers a few cocoanuts and ripe bananas. The fruit is eaten raw, but the rice is cooked. Their only table is a mat, and all sit on the ground while eating.

As Java is very near the equator, it is so hot by ten o'clock that all work in the fields has to be stopped. During the middle of the day the people sit in the shade and weave baskets. By four o'clock, the air is cooler and the father goes back to the rice field.

The people of the brown race have coarse black hair, flat faces, and short skulls. Many of them have strong and well-built bodies. They have some marks of the three chief races: the skull and eyes of the Caucasian, the long coarse black hair of the Mongolian, and the flattened features of the Negro.

The fruit-eating bats nibble the corn and tender shoots of the palms. The boys set snares to catch them.

Many people of the Malay race are yet savages. Others are traders or sailors. Many thousand people of this race inhabit the northern part of New Zealand. These are known as *Maoris*. They are brave and war-like, and have fought hard to prevent the white man from seizing their island home, but they have lost the largest and best parts of their islands. At the present time the white man rules over most of the brown race.

A Malay Boy.

The brown people raise a very large portion of the spices used in the whole world.

The brown or Malay race includes only about one-fourth as many people as the black race.

Fiji Hut.

Malay Hut.

Maori Chief, New Zealand.

4. The Mongolian or Yellow Race.

The people of the yellow and the brown races resemble one another. Most of them have coarse black hair, flat faces, and short skulls; small, oblique, and narrow eyes; long, thick and lank hair, and little or no beard.

The races differ slightly in color, in the slant of their eyes and in some other respects. The brown race is perhaps a branch of the yellow race. The American Indians also resemble somewhat the people of these two groups.

The Yellow race is found in nearly all parts of Asia, on the north and east of the great central highland. The home of this race reaches from the Himalaya mountains to the Arctic coast, and also includes every river basin sloping to the Pacific coast of Asia.

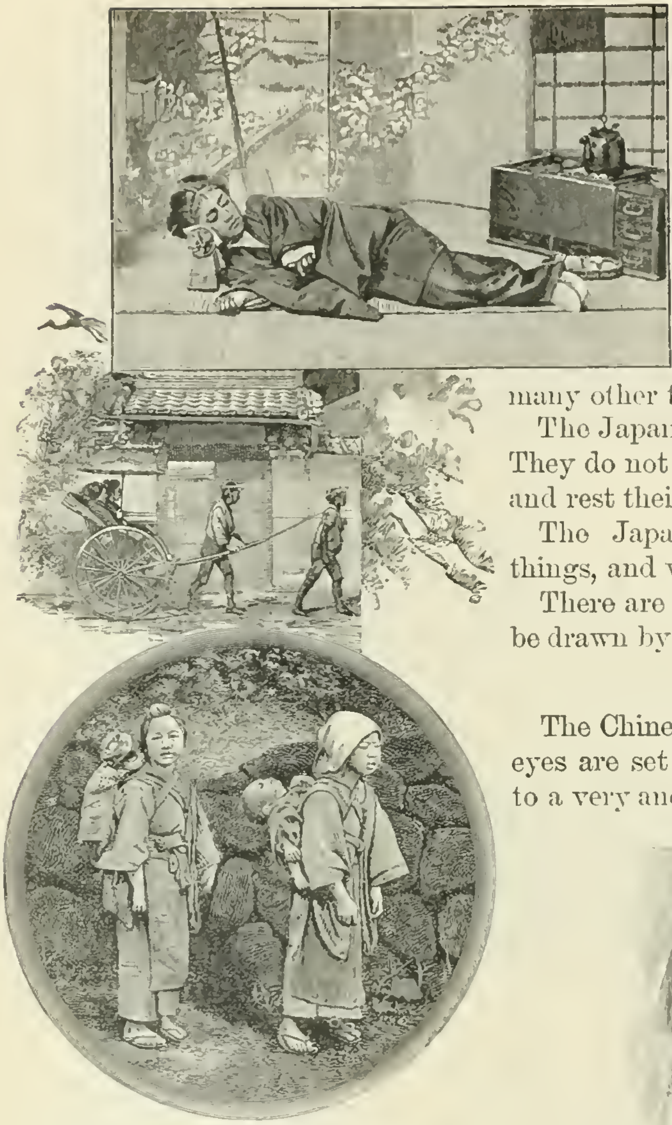
The Japanese and the Chinese are famous for the weaving of silk and the making of porcelain. Centuries ago, the Chinese invented printing and gunpowder, but for many years this nation has made little progress. The Japanese have made more progress than any other people of the yellow race. They have good schools, and have been wise enough to adopt many of the customs of the leading white nations.

A Japanese Village.

Many tribes of Yellow people are found on the long Arctic slope of Eurasia.

The Lapps and Finns of Northwest Europe and the Eskimos of America belong to the yellow race.

The yellow race includes more than one-third of the people on the earth. About one-fourth of the human race is found in China.



Scenes in Japan.

Japan and its People.

The girls and boys of Japan have round faces, bright black eyes, and pearly teeth. They often have ruddy cheeks, though their skin is brownish yellow. The boys dress nearly like the girls, but the boys have their hair shaved very close, while the girls' hair is twisted into many odd shapes.

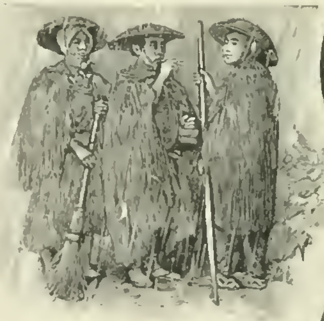
They wear very large sleeves which serve as pockets. Their shoes are simply wooden soles tied on with strings. They are not worn in the house. The girls and boys in Japan have a good time playing. Their fathers and mothers like to see their children playing. Girls often go out to play with their baby brothers and sisters tied on their backs, as you see them in the picture.

The Japanese houses are made of bamboo, with paper windows and doors. Many things are made of paper in Japan: fans, lanterns, hats, cloaks, caps, napkins and many other things.

The Japanese sit on mats of wadded cloth, or straw. They do not use chairs. They sleep on a padded quilt, and rest their heads on a wooden pillow.

The Japanese workmen make many very artistic things, and weave very beautiful cloth.

There are ponies in Japan, but most people prefer to be drawn by men, in the way you may see in the picture.



Japanese Rain-coats.

Woman of Burma

Chinese.

The Chinese.

The Chinese people look like the Japanese, but their eyes are set aslant. They belong to a very ancient race. They do not like to let strangers into their country. They form about one-fourth of all the people in the world. They grow a great deal of tea, and are noted for their fine silks. They live chiefly on rice. You may see how they dress, and what kind of houses they live in, by examining the pictures.

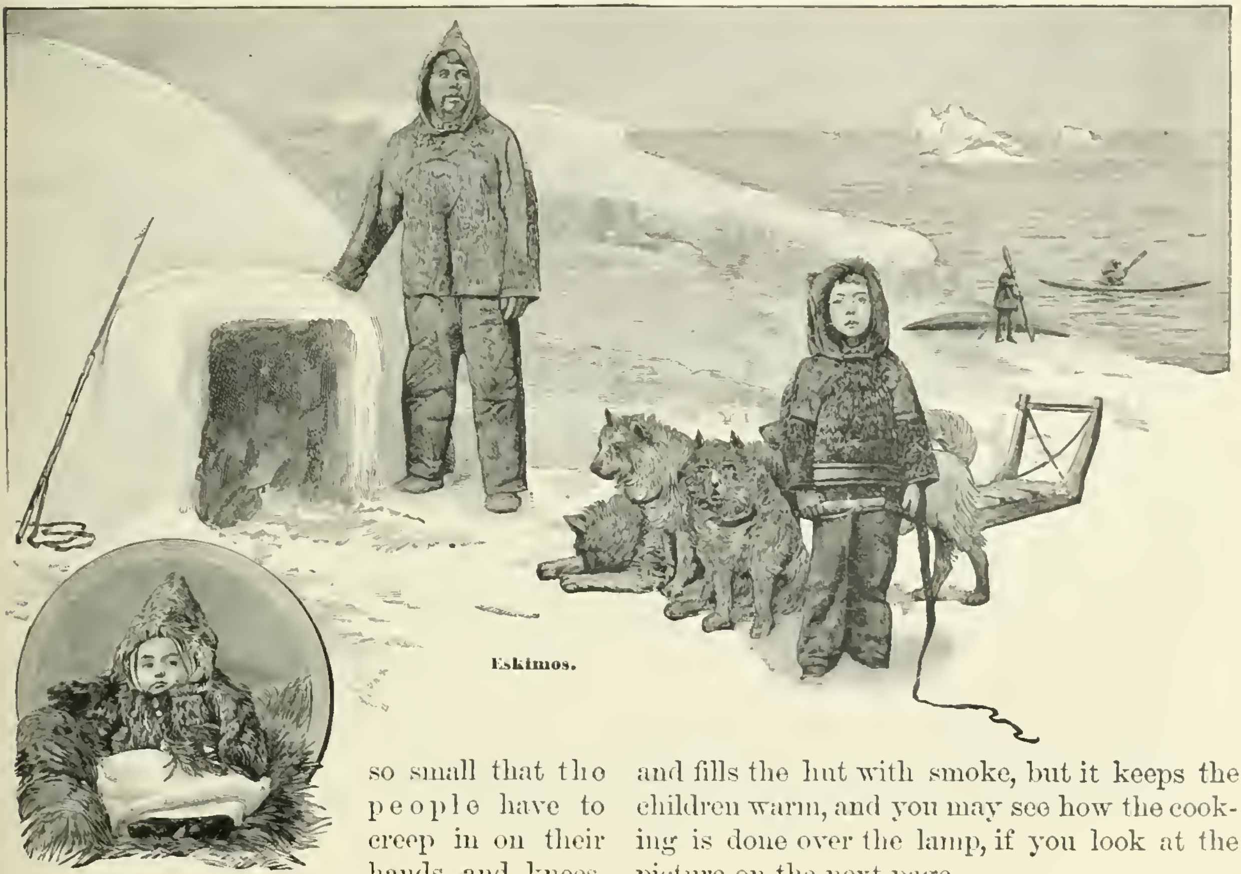
Street Scene in China.

A Chinese Village.

The Eskimos.

The Eskimos live along the north coast of North America and the islands near by. They live also on the south-west coast of Greenland.

Eskimo babies sleep in bags of feathers and sometimes in large hoods in the skin coats worn by their mothers. When they are old enough they wear pretty suits of sealskin. The Eskimo homes are huts made of stone or ice and they are partly under ground. The doors are so small that the people have to creep in on their hands and knees.



Eskimos.

Inside is a large lamp made from a hollow stone. The oil is got from the whales, and the wick is made of moss. The lamp makes the air of the hut smell close, and fills the hut with smoke, but it keeps the children warm, and you may see how the cooking is done over the lamp, if you look at the picture on the next page.

Inside an Eskimo Hut.

An Eskimo boy gets a great many splendid rides on his sled, drawn by his dogs. They run very fast over ice and snow.

The Eskimos hunt seals for food and clothing, and whales for their blubber, from which oil is made to burn. They hunt in a narrow canoe called a kayak. The kayak is covered with seal skins so that water cannot get into it.

The Eskimos eat fish, seals, bears, and parts of the whale. They have no bread because they can grow no grain.

A Lapland Home.

Here is a Lapland home. It has to be very warm because the weather in Lapland is very cold. The Lapps live in Lapland in the North of Europe. They belong to the Yellow race.

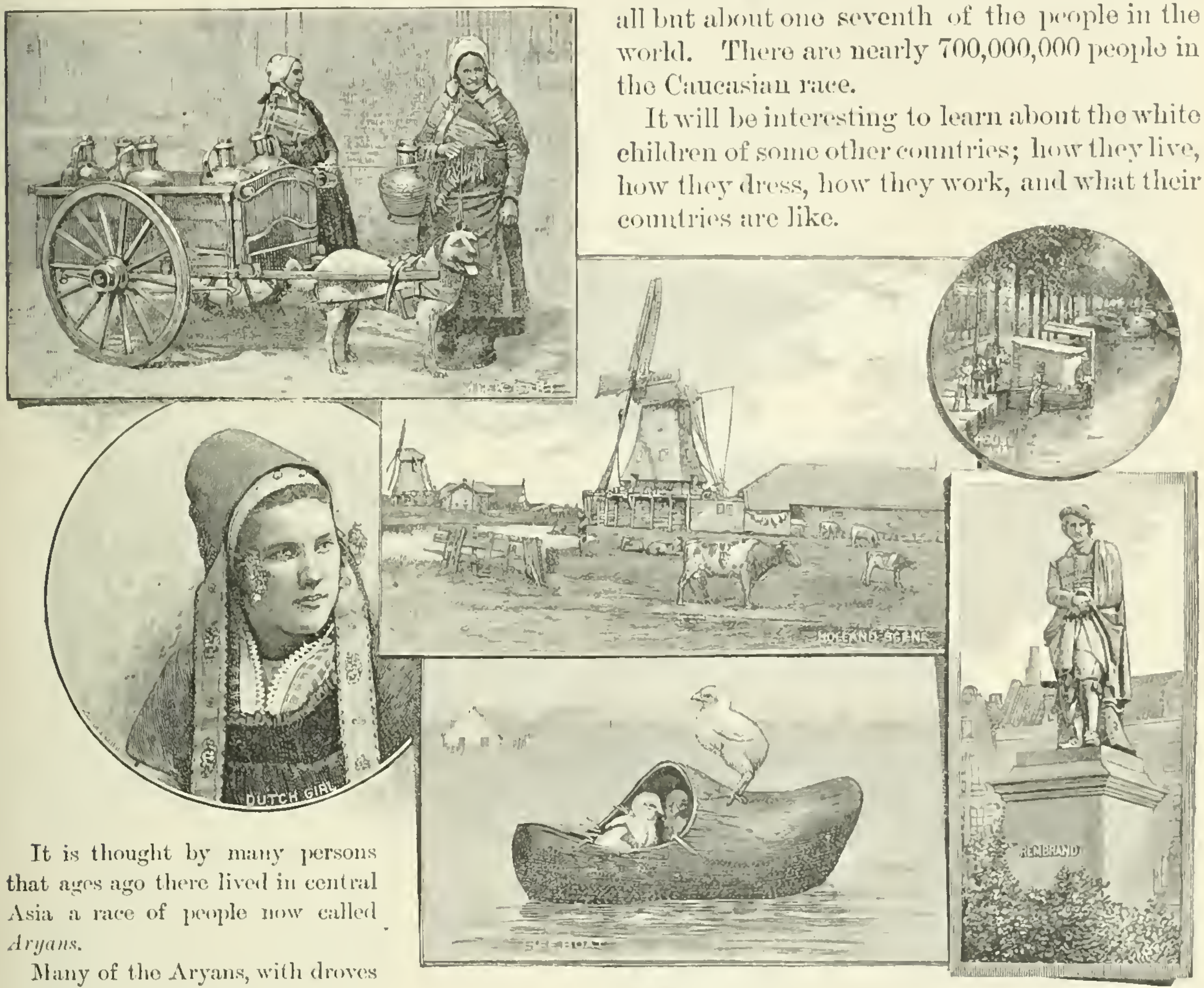
Inside the hut you would find strips of meat hanging from the walls. This meat is the flesh of the reindeer. The reindeer gives the Lapps skins for clothing, meat, milk and cheese for eating, and does the work that horses do for us. They can run one hundred miles in a day. The people sleep between deer-skins, so that the reindeer is of great service to them. The babies sleep in skin hammocks.

A Lapland Home.

5. The Caucasian or White Race.

The Caucasian or White Race is distinguished by a white or fair skin, oval face, straight eyebrows, prominent, regular features and straight or curly hair.

The home of the White race in the Old World lies between the lands of the black and the yellow races.



Scenes in Holland.

It is thought by many persons that ages ago there lived in central Asia a race of people now called *Aryans*.

Many of the Aryans, with droves of cattle, went into India.

The descendants of this branch of the Aryans are now called Hindus.

Many tribes of Aryans fought their way across the plains of *Low Europe*. These have grown into the leading nations of the world. They include nearly all the people living on the north of the Alpine system, and most of the white people in Canada, the United States, Southern Africa and Australia.

The people in the peninsula of Arabia and in the countries on the north of the Sahara desert, as well as in parts of the desert itself, are very dark, but most of them belong to the White race.

The White race outnumbers even the Yellow race. These two great races together include all but about one seventh of the people in the world. There are nearly 700,000,000 people in the Caucasian race.

It will be interesting to learn about the white children of some other countries; how they live, how they dress, how they work, and what their countries are like.

Children of Holland.

Holland is a low country. It is crossed by a network of canals and ditches. Its wide meadows look as level as a floor. No fences are needed, for canals separate the fields.

A Glacier.

A Swiss Cottage.

Boats with white sails seem to skim over the meadows, but of course they are in the canals. The girls are often more skilful than the boys in handling the boats. In winter the girls and boys skate on the canals, and drive loads to market before them on the ice.

Some of the children in Holland are born in boats, and spend their lives floating about on canals.

Banks or dykes are built to keep out the sea from the low land, and many windmills are used to pump the water from the fields into the canals.

The people burn dry sods, or peat for fuel.

In many parts of Holland the horses have to wear broad boards under their feet to keep them from sinking in the soft ground.

Children of Switzerland.

The children of Switzerland live in a land entirely different from Holland. There are high mountains which are always covered with ice and snow. Sometimes great masses of ice and snow crack and break away from the sides of the mountains and slide down into the valleys, destroying houses and carrying away trees and rocks. These crashing, rushing masses are called snow-slides or avalanches.

In the spring time the men and boys take their cattle and sheep higher up the mountain sides for pasture. They are to be away all summer, so the day of their departure is a day of great excitement. As the snow melts they climb higher till in the Autumn time when the snow storms threaten they drive their flocks home again. The day of their return is a day of rejoicing. Bells are rung, flags fly, and all the people who remained at home go out to meet those who have been away.

The girls helped their mothers while their fathers and brothers were up the mountains.

They mowed the grass, plaited straw hats, milked the cows and

Remains of a Snowslide.

goats that were not sent to the mountains, and made butter and cheese for market.

The Arabs.

The Arabs may be divided into the settled population of the towns and villages and the wandering Bedouins of the desert. The former live in houses made of stone or wood, or in huts of sun-dried bricks; the latter live in tents. The people are kind, polite and hospitable. "The guest is sacred in his camping-ground, and the foe himself is welcome once he has touched the tent-rope." They do not use chairs and tables like ours but take their meals seated on the floor, with the food in a dish on the floor or on a low table in the centre of their circle. The little boys go to school and sit around their schoolmaster, within reach of his rod. They all study the Koran, which is their Bible.

Inside of an Arab House.

In Arabia the date takes the place of wheat as used in our own land, of rice in Japan and of fruit in Java. It grows on a beautiful palm tree, called the date palm. These date trees wave in the fertile valleys as far as the eye can reach. The Arabs also eat butter and cheese made of goat's milk; drink the milk of the camel, and eat its boiled flesh.

Coffee is the chief drink of the Arabs. The coffee berries grow on the hilly lands near the strait that forms the outlet of the Red sea.

Arab School.

The camel is the most useful animal in Arabia. They travel rapidly, carry large burdens, and can go for days over the deserts without drinking. The camel is sometimes called "The Ship of the Desert." Its hair is soft and fine. It is used in making cloth. The tents of the Arab tribes that live in the desert are made of this kind of cloth.

The Arabs are very fond of their horses. They have the most beautiful horses in the world. An Arab loves his horse so much that he does not use a bit in its mouth, but guides it by pressing his knees against its sides.

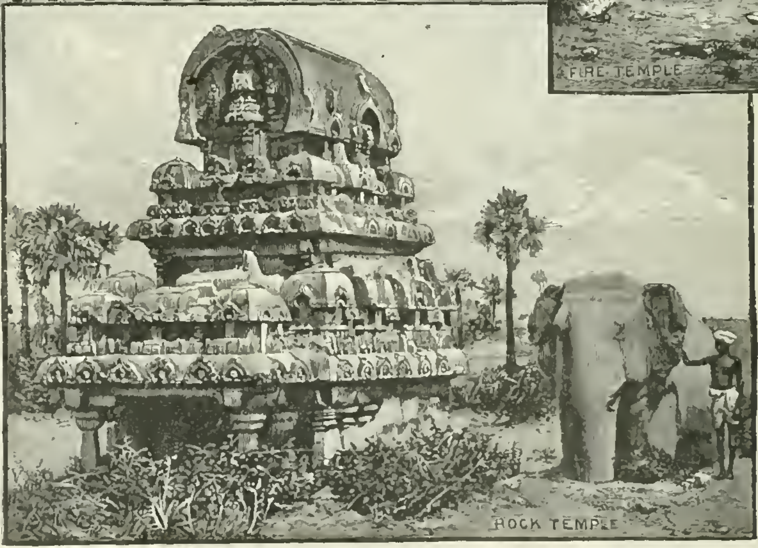
Arab Family.

6. Religions.

People who worship idols, or objects such as the sun, fire, animals or images, are called *pagans.* As a rule, they believe that there are spirits having magical power to do good or evil.

Nearly all savages are pagans. Most of them belong to the Black and the Red races, but there are many savages in each of the other races. About one-seventh of the people on the earth are pagans.

MOSQUE OF ST. SOPHIA


ROCK TEMPLE

India is the seat of a very old religion that divides its followers into classes called *castes.* The four principal castes are the priests, the soldiers and rulers, the merchants, the servants. Below these are the outcasts.

Brahma is one of the chief gods in this religion. The priests are called Brahmans, and all the believers are *Brahmanists.*

About one-half of the people in India, or one-tenth of mankind, are Brahmanists.

Buddha, a great sage and native philosopher of the fifth century B.C., taught that caste had nothing to do with religion. His followers are called *Buddhists.* The Buddhist religion in India soon passed away, but it spread over central and eastern Asia.

Most of the people of the yellow race, or about one-third of the human race, are Buddhists.

FIRE TEMPLE

The Semitic branch of the white race has given to the world the three religions whose followers worship one God.

The Christians believe in one God and the *Bible;* the Jewish people believe in one God but not in the *New Testament;* the Mohammedans believe in one God, but their sacred book is the *Koran.*

Mohammed, the founder of the religion which bears his name, lived in Arabia about a thousand years before the first English colony settled in America.

7. Governments.

A number of savages living under one ruler, or *chief*, form a *tribe*. A chief generally has absolute power over the lives and property of his subjects, but as the tribes become more civilized the people secure more rights.

The *tribal* government is the common form of rule among pagans.

Among some nations the rulers have absolute power. They make the laws and enforce them, and also hold office for life by right of birth. A nation thus ruled is an *absolute monarchy*. The rulers, or *monarchs*, take such names as *czar*, *shah*, *sultan*, *ameer*. The Mohammedan and Buddhist nations, except Japan, are absolute monarchies.

A government in which the ruler holds office by right of birth, but is limited in power, is called a *limited monarchy*. Such a ruler is commonly called a *king*, *queen*, *emperor*, or *empress*.

A government in which the people elect their own ruler is a *republic*.

The Christian nations, except Russia, are either limited monarchies or republics. Russia and Turkey are absolute monarchies. France and Switzerland are republics. The other nations of Europe are limited monarchies.

All the countries in America are republics, except the colonies of the nations of Europe.

All the nations of yellow people, except Japan, have absolute monarchies. Japan has a limited monarchy. All the white nations of Asia and Africa, which have their own rulers, are absolute monarchies.

Studying the Koran.

Review of the Races.

What races are separated by the Pacific ocean? By the Atlantic ocean? By the Indian ocean? By the desert of Sahara? By the Himalaya mountains?

Where is the home of the brown race? Of the black race? Of the white race?

Tell what race or races are found in each of these river basins: Amazon, Kongo, Mississippi, Nile, Ganges, Lena, Niger, La Plata, Mackenzie, St. Lawrence, Volga, Yang-tse, Amur.

To which race or races do the people in each of these lands belong? China, British Isles, Brazil, Arabia, Germany, United States, India, Greenland, Borneo, Russia, Japan, Congo State, Egypt, Peru, Mexico, Sudan, Java, Australia.

TOTAL POPULATION OF THE WORLD . .	1,500,000,000
Caucasian	690,000,000
Mongolian	600,000,000
Negro	150,000,000
Malay	35,000,000
American	12,000,000
Mixed Races	13,000,000
Christians	400,000,000
Buddhists	500,000,000
Mohammedans.	200,000,000
Brahmanists	150,000,000
Jews	8,000,000
Pagans and others	242,000,000

Eddystone Light, England.

DOMESTIC AND FOREIGN COMMERCE.

No state nor country produces all the things which its people need, but each has a surplus of some products.

The buying and selling, or the exchange of goods, is called *trade.* Trade on a large scale may be called *commerce. Domestic* commerce is that carried on between various parts of one country. *Foreign* commerce is that carried on between one country and another.

Great Britain leads in foreign commerce. Germany ranks second; France third; the United States fourth; and Canada fifth.

The rivers which are of greatest use as routes of trade are those which are deep and slow, and which flow through the most productive regions. No other river surpasses the St. Lawrence for trade purposes.

Lakes and inland seas that lead in the direction of trade centres are often of greater service than rivers.

The water way along the Great Lakes between Canada and the United States is of more importance than any other lake or river route in the world.

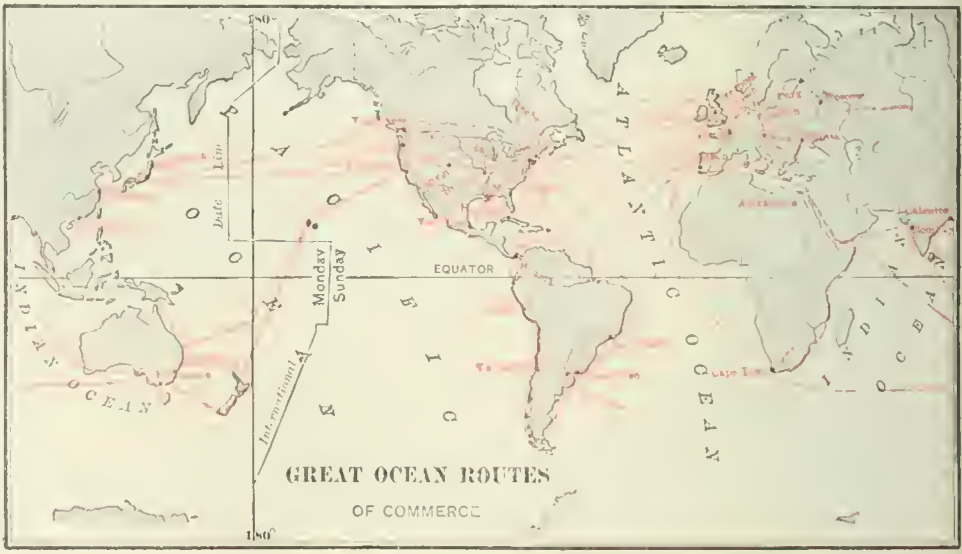
The oceans form the main highway of trade between distant nations. The sea spreads in one vast body around the continents, so that a ship can sail from any one of the oceans to all the others.

Many large seaports, such as London, New York, Liverpool, Boston, San Francisco and Montreal, are on deep harbors formed by the slight drowning of river valleys. The harbors are in many cases some distance inland, at the head of the drowned part of the valleys. Tidal currents flowing in and out of the rivers help vessels to enter and clear from the ports.

Thus, London is seventy miles from the mouth of the Thames, —70 miles inland towards the farms and work shops of busy England. Montreal is about 1000 miles up the drowned valley of the St. Lawrence. Philadelphia and Baltimore are near the heads of two bays in slightly-drowned valleys.

England, with her extensive manufactures and her numerous colonies, has grown to be the centre of the world's ocean commerce.

By examining the chart of great ocean routes it will be seen that the world's commerce centres in London. It can also be seen that Canada occupies a central position in carrying on the trade of the British Empire.



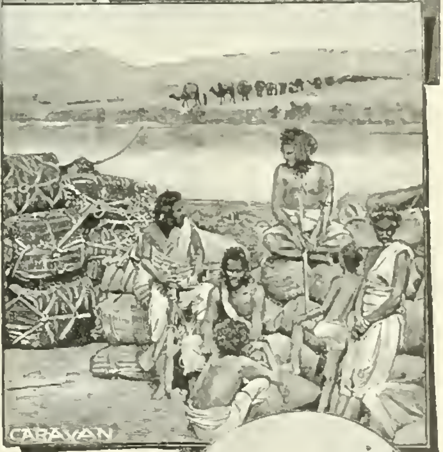
Routes of Trade.

We have seen that the same products are not found in all parts of the earth. The rich prairies are best suited to farming, and the higher plains to grazing. The southern plains yield large harvests of cotton, while the highland of the west produces gold and silver.

If we look into the stores a moment we find tea from China, and coffee from Brazil; spice from Java, and fruit from the groves of California; rubber from a tree in the selvas, and knives that came from the workshops of England.

Rivers, railroads and oceans are the chief highways of trade. Much has been done to improve many of these highways. Rocks have been taken out of rivers and harbors, and sandbars have been dredged away. Canals have been made round rapids and waterfalls, as well as from river to river and from sea to sea.

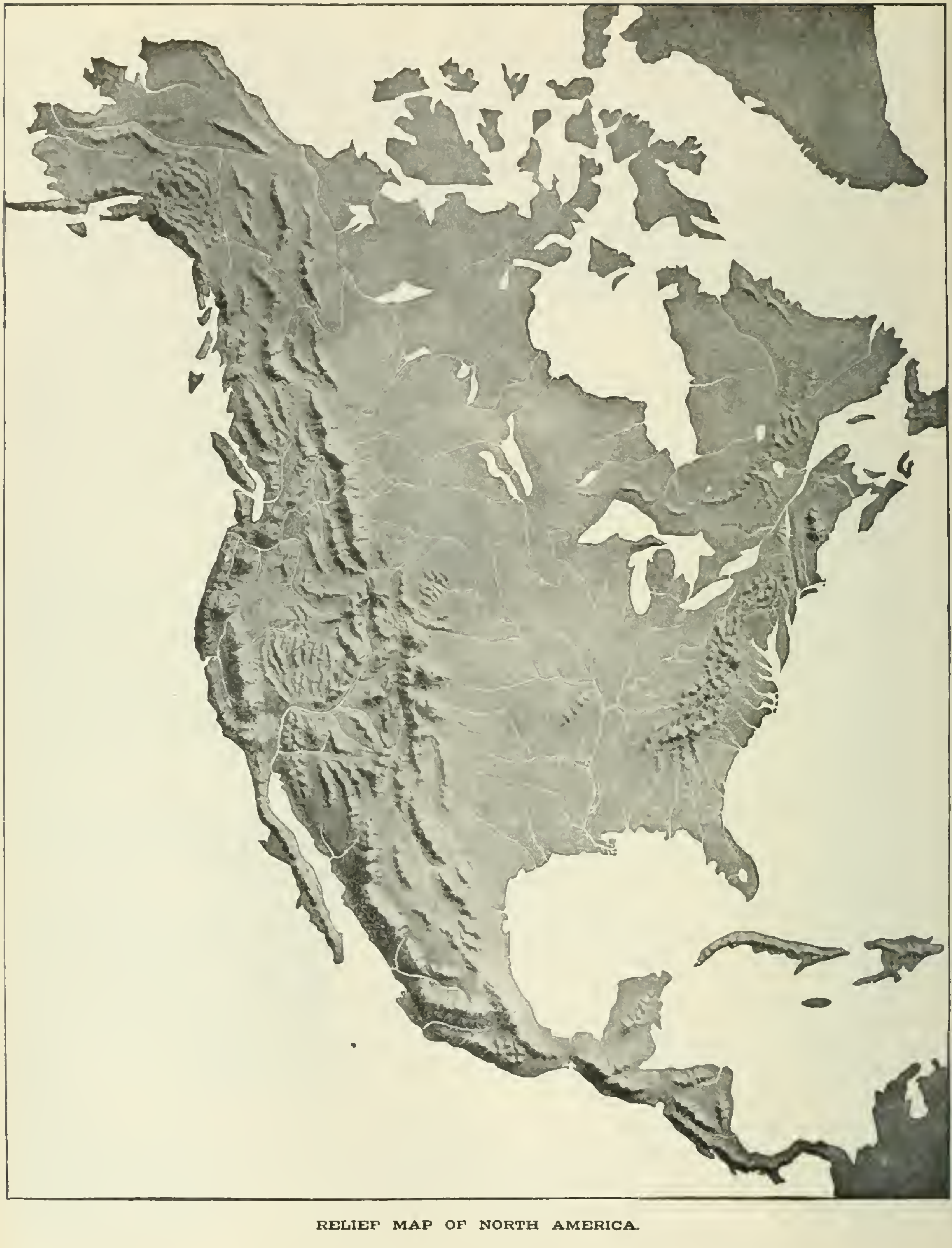
It is far cheaper to carry goods by water than by land. On the sea there are no costly roads nor tracks to build and to keep in repair.



Every producing region needs one or more shipping points. These become centres of trade. They should be within easy reach of all parts of the region, and should connect by water, rail or other route, with the markets of the world.

Railroads cross the continent of North America from ocean to ocean, by half a dozen routes. They run along every seacoast. They wind with great rivers. They climb mountains and cross cañons.

Years ago rivers were the chief highways of inland trade, but now railroads have taken first place. To-day cities and towns are dotted all along the lines where freight trains gather up the products of farm, forest and mine.



RELIEF MAP OF NORTH AMERICA.

NORTH AMERICA.

1. Map Studies.

On the relief map of North America locate the place where you live.

What oceans border on North America? What continent adjoins it on the south? In what direction is Europe from North America? Which part of our continent lies nearest Asia?

Turn to the map of the heat belts and tell what you can about the seasons in North America? See pages 23 and 24.

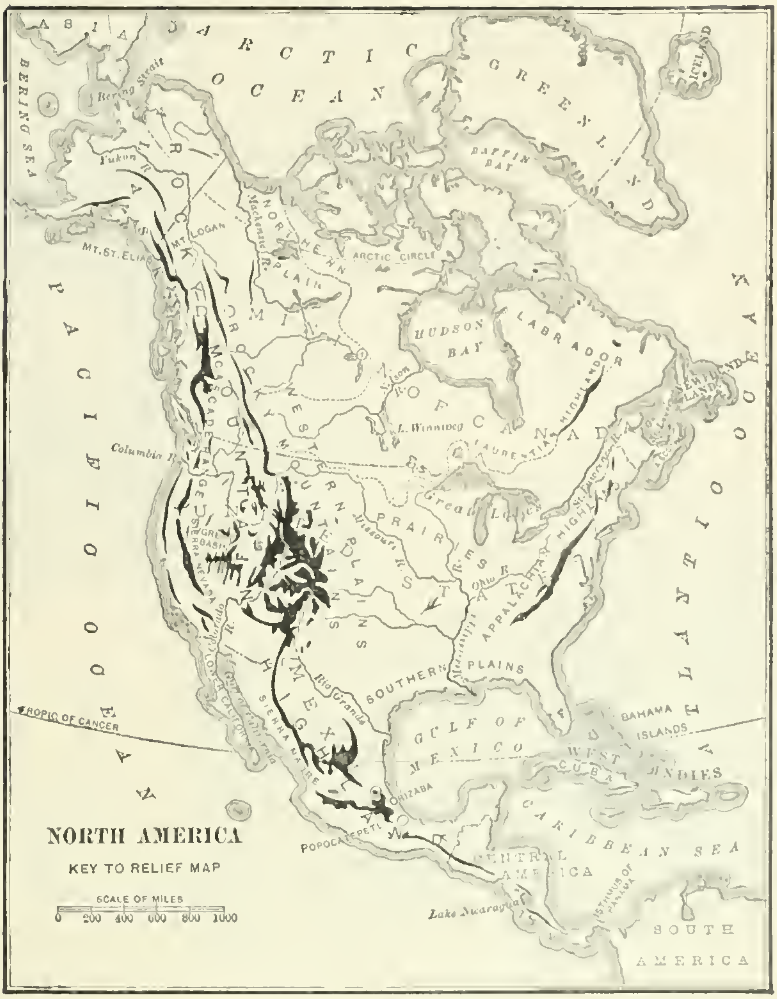
Which part of North America is in the path of the westerly winds? Of the trade winds? See page 15.

In what direction does the Rocky Mountain highland extend? Along which side of the continent does it lie?

Which part of this highland looks the highest? The widest?

Into what gulf does the Colorado river flow? Name a large river flowing into Bering sea.

Where is the Appalachian highland? In what direction does it extend? Is it higher or lower than the Rocky Mountain highland? Is it longer or shorter? Wider or narrower?



On which side of the Rocky Mountains are there vast plains? Name the largest river flowing into the gulf of Mexico. What highlands are on the east, and west sides of the Mississippi basin? Which part of the central plain is drained by the Mississippi river and its branches?

What river forms the outlet of the Great Lakes? What highlands are separated by the valley of this river?

Which portion of the central plain is in the basin of the Nelson river? Into what bay does this river flow?

Describe the course of the Mackenzie river. Which part of the central plain does it drain?

What are the names of the longest two rivers that flow into the Pacific ocean?

What bodies of water partly surround the peninsula of Florida? The peninsula of Labrador? The peninsula of Alaska? The peninsula of Lower California?

Name the largest river that flows into the gulf of California. Into the Arctic ocean.

Compare the size of the basins of the St. Lawrence, Mackenzie, Nelson and Mississippi rivers.

In what direction does the St. Lawrence river flow? The Missouri? The Yukon? The Rio Grande? The Colorado? The Ohio? The Nelson? The Mississippi?

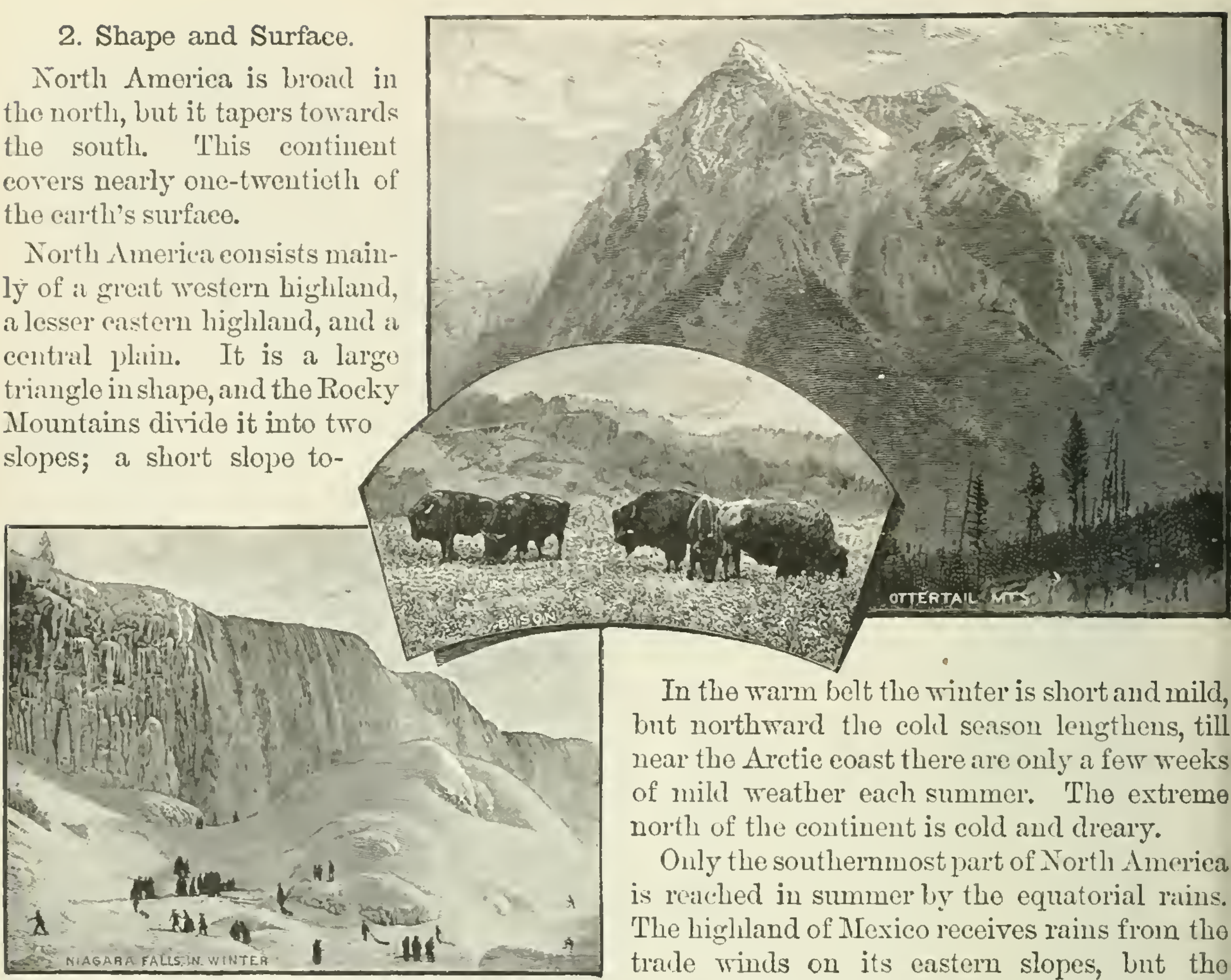
Sketch the general outline of North America,—using only three straight lines. In what general direction does the east coast extend? The west coast? The north coast? Which coast is the longest?

Draw the north coast of this continent; the west coast; the east coast. Which is the most irregular?

2. Shape and Surface.

North America is broad in the north, but it tapers towards the south. This continent covers nearly one-twentieth of the earth's surface.

North America consists mainly of a great western highland, a lesser eastern highland, and a central plain. It is a large triangle in shape, and the Rocky Mountains divide it into two slopes; a short slope towards the west, and a long slope towards the east. The eastern slope is broken by the Appalachian or Alleghany Mountains, and by the Laurentian Highlands. The Appalachian Mountains are near the eastern coast of the United States. The Laurentian Highlands extend from the Gulf of St. Lawrence, the River St. Lawrence, and the Great Lakes towards the Arctic Ocean west of Hudson Bay.


OTTERTAIL MTS.
BISON
NIAGARA FALLS IN WINTER

3. Climate.

This continent crosses the warm and the cool belts, and also enters the cold belt on the north and the hot belt on the south. Only a small part of the continent is in the hot or the cold regions. Far the greater part is in the belts having cold or cool winters and warm or hot summers.

In the warm belt the winter is short and mild, but northward the cold season lengthens, till near the Arctic coast there are only a few weeks of mild weather each summer. The extreme north of the continent is cold and dreary.

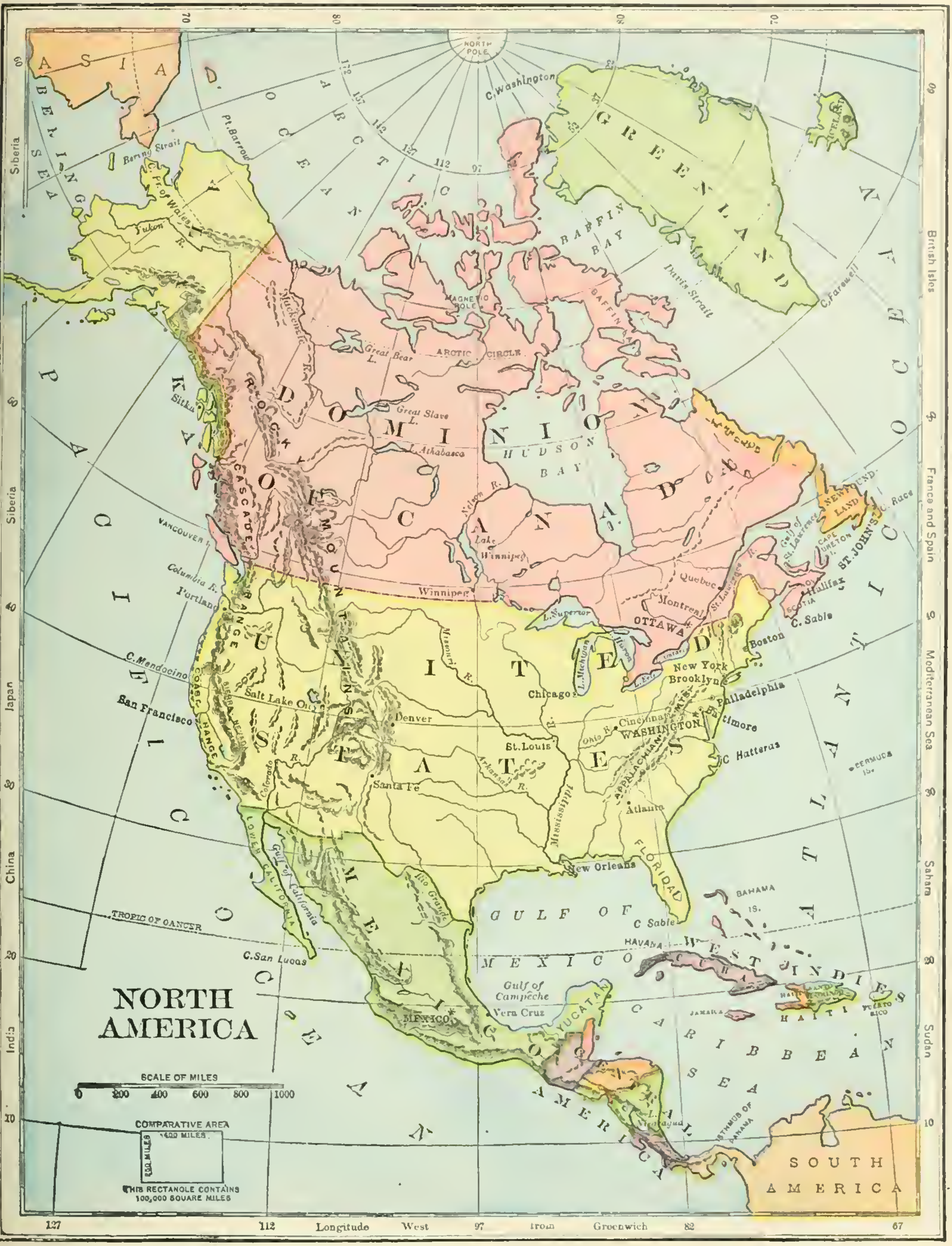
Only the southernmost part of North America is reached in summer by the equatorial rains. The highland of Mexico receives rains from the trade winds on its eastern slopes, but the western slopes are not well watered. The wide middle portion of the continent is in the path of the eddying storms of the westerly winds.

The westerly winds from over the North-Pacific eddy give a mild and even climate to the greater part of the west coast of North America, for the seasons over the broad ocean do not change so much as over the land.

In the interior of the continent, far from the sea, the summers are very warm and the winters very cold. There, the change of seasons is much greater than near the coast.

On the east coast the winter weather is mild when the southeast wind blows from over the Gulf stream, but is very chilling when the northeast wind from over the Arctic current reaches the land, or when cold air flows out from the interior of the continent.

When the cold heavy air of winter covers the interior of North America, not much moist air can flow in, and the inland rainfall is therefore not very heavy. When


NORTH AMERICA
SCALE OF MILES
0 200 400 600 800 1000
COMPARATIVE AREA
400 MILES
250 MILES
THIS RECTANGLE CONTAINS 100,000 SQUARE MILES
ASIA
NORTH POLE
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
BERING SEA
Bering Strait
Pt. Barrow
C. Pr. of Wales
Yukon R.
ALASKA
Sitka
C. Washington
GREENLAND
ICELAND
BAFFIN BAY
BAFFIN LAND
Davis Strait
C. Farewell
MAGNETIC POLE
ARCTIC CIRCLE
Great Bear L.
Great Slave L.
L. Athabasca
Mackenzie R.
DOMINION OF CANADA
HUDSON BAY
Nelson R.
Lake Winnipeg
Winnipeg
LABRADOR
NEWFOUNDLAND
C. Race
ST. JOHN'S
Gulf of St. Lawrence
CAPE BRETON I.
NOVA SCOTIA
Halifax
C. Sable
St. Lawrence R.
Quebec
Montreal
OTTAWA
ROCKY MOUNTAINS
CASCADE RANGE
VANCOUVER I.
Columbia R.
Portland
C. Mendocino
COAST RANGE
SIERRA NEVADA
San Francisco
Salt Lake City
Denver
Santa Fe
Colorado R.
UNITED STATES
Missouri R.
Arkansas R.
Mississippi R.
Ohio R.
L. Superior
L. Michigan
L. Huron
L. Erie
L. Ontario
Chicago
St. Louis
Cincinnati
WASHINGTON
New York
Brooklyn
Boston
Philadelphia
Baltimore
C. Hatteras
APPALACHIAN MTS.
Atlanta
BERMUDA IS.
New Orleans
FLORIDA
C. Sable
GULF OF MEXICO
Gulf of Campeche
Vera Cruz
YUCATAN
MEXICO
Rio Grande
LOWER CALIFORNIA
Gulf of California
C. San Lucas
TROPIC OF CANCER
HAVANA
CUBA
BAHAMA IS.
WEST INDIES
JAMAICA
HAITI
PORTO RICO
CARIBBEAN SEA
CENTRAL AMERICA
L. Nicaragua
ISTHMUS OF PANAMA
SOUTH AMERICA
Siberia
Japan
China
India
British Isles
France and Spain
Mediterranean Sea
Sahara
Sudan
127 112 Longitude West 97 from Greenwich 82 67
70 80 90 70
60 50 40 30 20 10

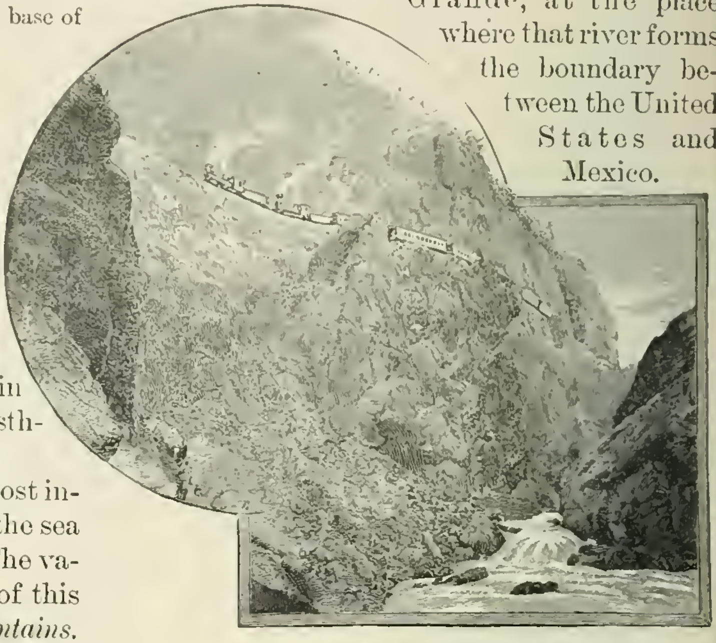
the warm light air of summer spreads over the interior, the moist winds from the sea flow inland and give plentiful rains, except on the lowlands among the western mountains and on the plains along the eastern base of the Rocky mountains.

4. Rocky Mountain Highlands.

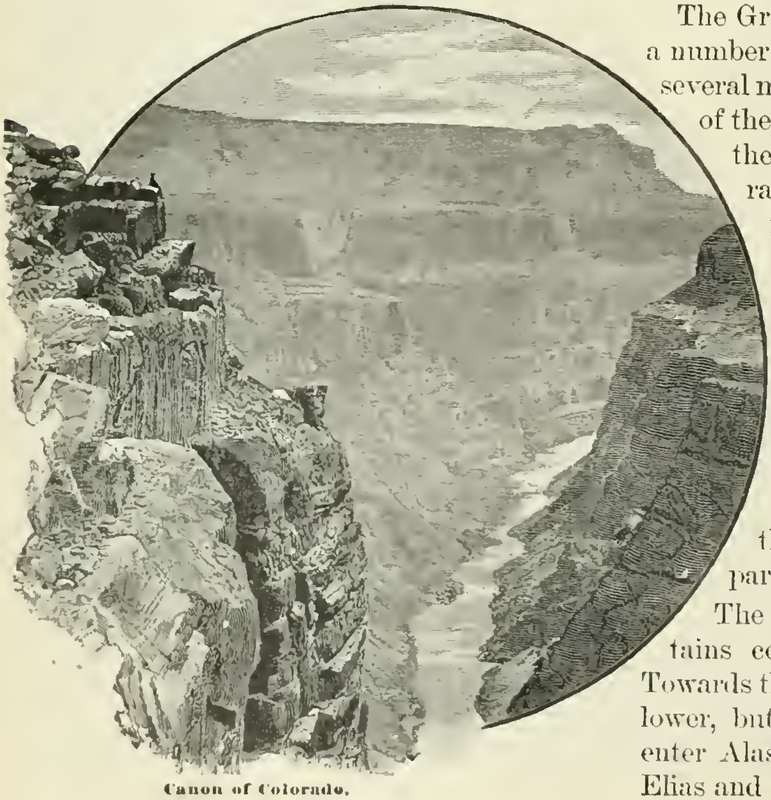
The plateau of Mexico is about a mile and a half above the sea level. High ranges of mountains lie along its borders, and steep slopes descend from them to the shores on the east and west coasts. The highest range, named the Sierra Madre, runs along the west coast.

The widest part of the Rocky Mountain highland is about midway between the isthmus of Panama and Bering strait.

In this broad portion, lofty ranges almost inclose a vast plateau, about a mile above the sea level and several hundred miles wide. The various ranges lying along the eastern side of this plateau are known as the *Rocky mountains.* This chain extends far northward into the basin of the Yukon river, and southward to the Rio Grande, at the place where that river forms the boundary between the United States and Mexico.



Crossing the Rockies.



Canon of Colorado.

The Great Basin north of Mexico consists of a number of plateaus and valleys framed in by several mountain ranges. The most important of these ranges are the Rocky mountains on the east, the Sierra Nevada and Cascade ranges on the west, and the Wasatch range, running between the Rocky and Sierra Nevada ranges.

West of the Sierra Nevada and Cascade mountains lie several mountain ridges forming a low *Coast range.* Being near the ocean, and in the path of the westerly winds, this range has a milder and more uniform climate than the regions in the interior of the continent. Most parts of the range are wooded.

The Cascade range and the Rocky mountains continue through British Columbia. Towards the north the ranges become generally lower, but just before the Rocky mountains enter Alaska there are two peaks, Mount St. Elias and Mount Logan, which are the highest

peaks in the entire Rocky Mountain range. They are in Canada a short distance east of Alaska. Mount Logan, recently discovered, is about a quarter of a mile higher than Mount St. Elias. Mount Logan is 19,500 ft. in height, and Mount St. Elias 18,010.

In the far northwest, the ranges of the Rocky mountain highland spread apart in the great peninsula of Alaska. The main range bends westward along the coast, to the end of the Alaskan peninsula.

The western coast of British America and the southwest shore of Alaska have a mild climate, although so far from the equator. The ocean winds are there warmed by the drift from the Japan current. Warm moist winds from the sea are chilled in rising over the mountain slopes in Alaska, and therefore yield very heavy snowfall.

Water Carrier, Mexico.

5. The Appalachian Highland.

The portion of the Old Appalachian range known as the *New England highland* stretches from the Gulf of St. Lawrence to the Hudson river. This highland consists of a broad and rolling upland, above which rise hills and mountains. The surface is also broken by many valleys, in which lakes abound.

The highest group of peaks in this highland is known as the *White Mountains.* The Connecticut valley, with its fine farming lands, lies between this group and the *Green Mountains.*

Mount Washington, one of the White Mountains, is the highest peak in the northeast part of the United States.

The rolling or hilly slope of the New England highland reaches to the sea. The cities and towns of this region are nearly all on the sea coast or near the falls in the rivers. Boston is the greatest seaport in this region.

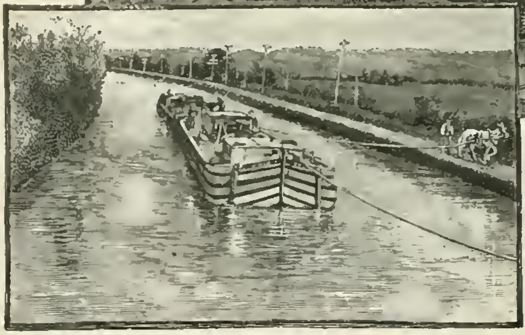
Mexican Village.

The surface of the New England highland was heavily scoured by the ancient ice-sheet from the Laurentian highland. The weaker rocks were worn away, and rock waste was left unevenly spread over the region. When the

Century Plants, Mexico.

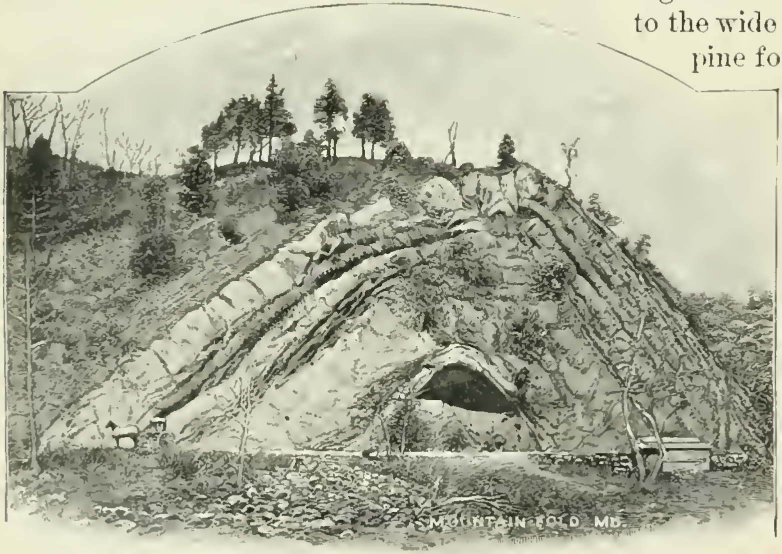
ice melted, the streams were held back in the scoured basins and behind the barriers of drift, or rock waste, thus forming numerous lakes. Many of the streams were pushed aside from their old valleys, and were made to flow over ledges from which they now fall in rapids and cascades. Since the ice melted, there has not been time for the streams to cut down the ledges and drain the lakes. Towns and cities have grown up at the falls and rapids where water power is supplied to many mills and factories.

New York and Brooklyn.



Erie Canal.

For some distance south-west of the Hudson river, the Old Appalachian range is neither so high nor so wide as in the New England highland. This lower part looks like a long and narrow plateau. Still farther south-west, the old range becomes higher and wider, and is there called the *Blue ridge.*


MOUNTAIN FOLD, MD.

Mountain Formed of Folded Rocks.

NOTE.—The picture of a mountain fold should be carefully examined by the pupils in order that they may learn how mountain ranges were really formed. In the gradual cooling of the earth the outer crust became too large, and in shrinking, certain parts folded outwards and formed the world's highlands.

On the south the Blue ridge runs into the Carolina highland which contains the highest peaks in the whole range.

Mt. Mitchell is about a mile and a quarter high and overtops all other peaks in the Appalachian highland.

The slope east of the Blue ridge and Carolina highland is a hilly region, gradually descending to the wide coastal plain with its farm lands, its pine forests, and its cypress swamps.

The Great Valley in the Appalachian highland is a long lowland, with mountains on the east and the west. At the north, the Great Valley opens into the St. Lawrence basin; and at the south, into the Gulf coastal plain. The greater part of the long valley is covered with farms.

The largest rivers rising in the Appalachian region do not run *along* the Great Valley but *across* it, and escape by deep and narrow gorges worn through the inclosing highland. The Hudson, Delaware, Susquehanna, Potomac, and James rivers rise in the highland *west* of the Great Valley, and flow across the valley and the Old Appalachian range. The Tennessee river rises in the old range *east* of the long valley, but flows westward across the valley and reaches the Ohio river.

The most important of these cross-gorges in the Appalachian range is that of the Hudson river, for it unites with other valleys to make an open highway northward to the St. Lawrence basin, and westward up the Mohawk river towards the Great Lakes. Northward the valley route leads through Lake George and Lake Champlain.

Work of Beavers.

Nearly three-fourths of a century ago, the long *Erie canal* was built along the Mohawk branch of the Great Valley, from Lake Erie to the Hudson river. This canal furnishes a cheap route of trade between the great lakes and the Atlantic sea coast. Railroads now follow closely along the same route.

6. The Laurentian Highland.

The St. Lawrence river flows in a valley that separates the Laurentian highland from the Appalachian.

The Laurentian highland extends from the Labrador peninsula southwest towards the Great Lakes; thence running north of these bodies of water, the highland bends to the northwest and approaches the Arctic coast not far from the west shore of Hudson bay.

Northwest of the St. Lawrence gulf and river the highland is a desolate region strewn with boulders and broken by valleys. Bare rocky hills rise in some places, but no part deserves the name of mountain range.

This region was once more mountainous than it now is, but ages ago it was worn down.

The northeast part of Canada has sunk partly beneath the sea, making the coast line very irregular. The St. Lawrence valley was thus partly drowned, forming a broad gulf and carrying the navigable water far inland.

In the valleys of the low plateau are many lakes and swamps through which streams flow. Near these grow thick forests that make travelling very difficult.

Many fur-bearing animals are found in this region. Among these are beavers, foxes, martens and musk-rats. Two species of large deer, the moose and the caribou, graze on mosses and tender shoots of trees in this cold country. Ducks, geese and other sea-fowl abound along the rocky shores.

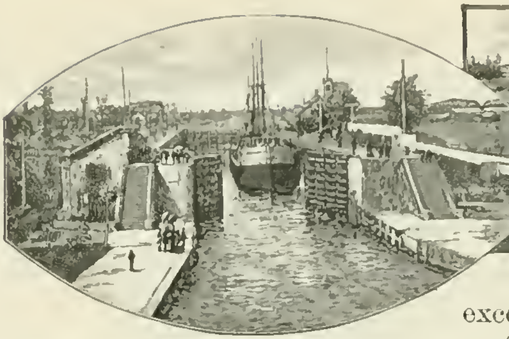
Far to the north and northeast of the Laurentian highland are many large islands. Ages ago these were probably part of the continent, and were afterwards separated from it by the sinking of the land. The largest of these islands is Greenland.

7. The St. Lawrence Basin.

The Great Lakes between Canada and the United States fill hollows on the southward slope of the Laurentian highland. These lakes and the St. Lawrence river with the streams

Elk.

and rivers flowing into them, form the St. Lawrence system.



Lock in the Soo Canal.

Rapids in the St. Mary's Strait.

The basins of the Great Lakes were deepened, though not wholly formed, by the scouring of the ancient ice-sheet that moved across them from the Laurentian highland.

Along the Arctic Shore.

No long slopes send large rivers to the Great Lakes. Much of their water supply comes directly from rain and snow. The bottoms of all the lakes, except Erie, descend below the sea level. The surface of Lake Superior is about an eighth of a mile higher than the mouth of the St. Lawrence. The outlet of this lake is known as St. Mary's strait. It is not navigable, because it descends in rapids to the level of Lake Huron.

The so-called *St. Mary's strait* is a river about sixty miles long. Which picture shows the rapids in this river? Vessels avoid these rapids by going through the "Soo" canal. One of the pictures shows a steamer ready to come from the canal lock.

There are no rapids to prevent vessels from sailing between lakes Michigan, Huron and Erie, but between lakes Erie and Ontario there is an abrupt descent of the upland country, in a low bluff.

Niagara river, the outlet of Lake Erie, originally fell over the northern edge of this upland, thus forming the falls of Niagara. Since then the river has slowly cut a deep gorge back into the bluff,—the falls always keeping at the head of the gorge. They are now about six miles back from the edge of the bluff.

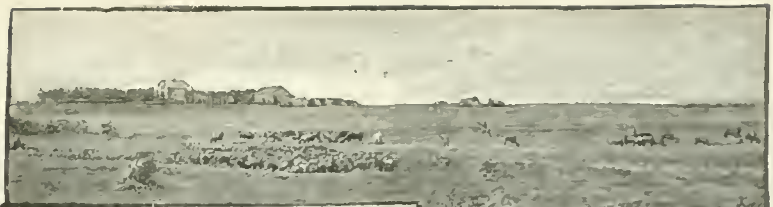
The falls of Niagara are about three-fourths of a mile wide and one hundred and fifty feet high. Below the falls, the river rushes through its long gorge, making rapids of great size and grandeur.

The cliffs at Niagara consist of layers of limestone on softer rock. From time to time, as the lower rock is worn away, huge masses of limestone break off and fall into the gorge, The stream must have worked thousands of years to cut this great valley, yet that time is short compared with the period during which the Hudson river was cutting its long gorge.

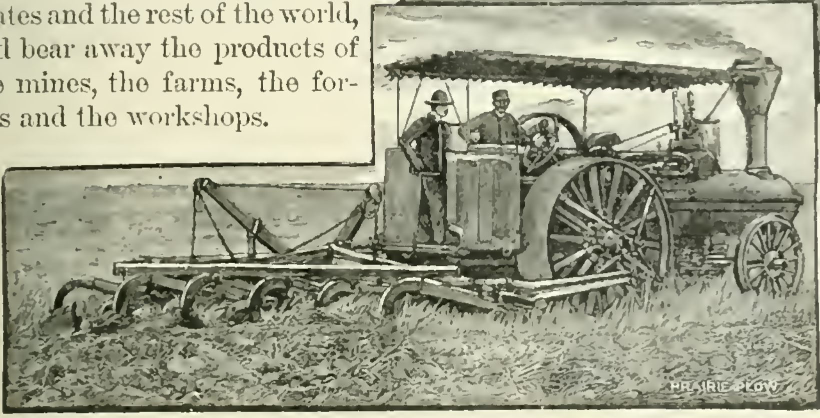
A large water-way, known as the Welland canal, has been made to join lakes Erie and Ontario.

From Lake Ontario the St. Lawrence river forms a water-way to the sea. The river has rapids, but canals have been built past them.

The St. Lawrence system is the best inland water way in the world. Hundreds of large steamers and other vessels help to carry on trade between the lake ports of Canada and the United States and the rest of the world, and bear away the products of the mines, the farms, the forests and the workshops.



Prairie Farm.



Several large lakes extend northwestward in the basins of the Nelson and Mackenzie rivers. These bodies of water, together with the Great Lakes, form a remarkable chain stretching along the south and southwest borders of the old Laurentian highland.

8. The Great Central Plain.

The main portion of North America is a great plain extending from the Gulf of Mexico to the Arctic Ocean, between the Rocky mountains on the west, and the Appalachian and Laurentian highlands on the east. This plain is drained by three great river systems; the Mississippi system, the St. Lawrence system, and the northern system, the chief rivers of which are the Mackenzie and Nelson. The height of land dividing these river systems is near the boundary between the United States and Canada.

The northern slope is chiefly in Canada and contains the great wheat belt, and the best grazing lands of North America. Along the western part of this slope the climate is influenced by the warm winds that come from the Pacific Ocean.

Along the Arctic shore there are low level plains from seventy to one hundred miles wide. South of these plains a large part of the country is covered with forests, till the immense tracts of level land forming Manitoba, Saskatchewan, and Alberta are reached. In these provinces the wooded districts lie chiefly near the rivers, and are called bluffs.

The basin of the Nelson river is mostly in the cool belt. The southern part of that basin includes the wide fertile prairies of the Red River valley—famous for their crops of wheat; for although the winters are very cold, the summers have long days of strong sunshine, and plants grow there very rapidly.

Ages ago a great lake covered the region now known as the Red River prairies. Muddy streams flowed into the lake, and fine soil settled evenly over the bottom. When the lake was drained, the smooth bottom became a level plain. The water flowed off long ago, and yet the plain is so young that streams have hardly cut its surface.

The lowlands in the upper Mississippi valley

Going to Market, New Orleans.

Rice Culture.

consist of level or rolling grassy plains, called *prairies*. They merge into the forest lands on the east and south, into dry plains on the west, and into colder plains on the north. They form one of the richest grain regions of the world.

South of the prairies lies the southern plain. The greater part of this plain is low rolling upland. It is cut into eastern and western parts by the wide flood plain of the Mississippi river.

The part near the shore is young, but farther inland the plain is older and much worn by streams that have extended their courses across it from the higher and older interior.

A large part of the Gulf coast is low, sandy and barren. Nearly all parts of the Southern plain were at one time wooded, and forests still cover the greater portion of the region. Pine lumber is a valuable product of these forests.

Large districts in the South have been cleared of trees, and now rank among the most productive parts of the country. Cotton is the leading crop on these cleared lands.

Rice thrives on low flood plains and on the swampy borders of lagoons behind coastal sand bars.

9. The Atlantic Coastal Plain.

East of the Appalachian highlands lies the Atlantic coastal plain. This plain has been formed from soil carried down by the rivers from the Appalachian range, and by the Mississippi river and Gulf stream. As in the Gulf coastal plain, the region near the sea is young and smooth, while the plain farther inland is older and is more deeply and widely cut by streams that flow across it from the Appalachian highland.

The widest part of the Atlantic coastal plain is southeast of the Carolina highland. Thence the plain narrows northeastward to the mouth of the Hudson river.

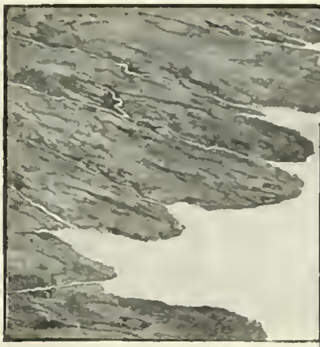
The southern part of this coastal plain is in the warm belt and has seasons like those of the Gulf coastal plain. The northern part of the Atlantic coastal plain has the seasons of the cool belt. South-east winds from over the warm Gulf stream help to make the winters of this coastal plain milder than those of the inland regions in the same latitude.

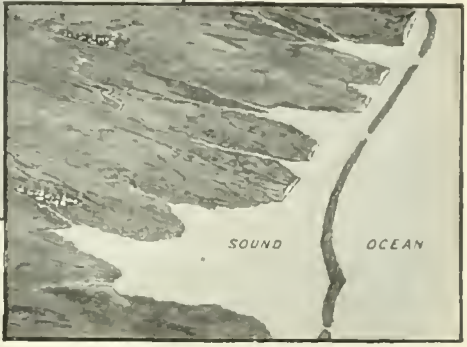
The long Atlantic coastal plain has plenty of rainfall. It is brought by winds from over the Gulf of Mexico and the Atlantic Ocean.

In the southern part of the plain, the land slopes so gently under the sea that good harbors are found only in the river mouths. Sand bars, built by waves, lie along the coast and partly inclose many sounds. Inlets through the sand bars are kept open by tidal currents.

Large quantities of rice are raised in the wet lands in the warmer parts of the Atlantic coastal plain, as well as in the Gulf coastal plain. This grain thrives in lagoon swamps inside the sand bars, and in river swamps which at certain times can be flooded or drained.

The best cotton in the world grows on some of these border islands and on the shores of the mainland near by. The soil is sandy, but the plants which grow on it produce long and fine fibres.


Old Coastline.



New Coastline showing Bars.

The peninsula of Florida, lying between the gulf and the ocean, is chiefly a coastal plain formed by the uplifting of the sea-bottom, but partly also the work of coral polyps. Tiny creatures of this kind, in countless numbers, are still very active in building the southern portion of the peninsula further out into the warm Gulf stream.

Orange Grove.

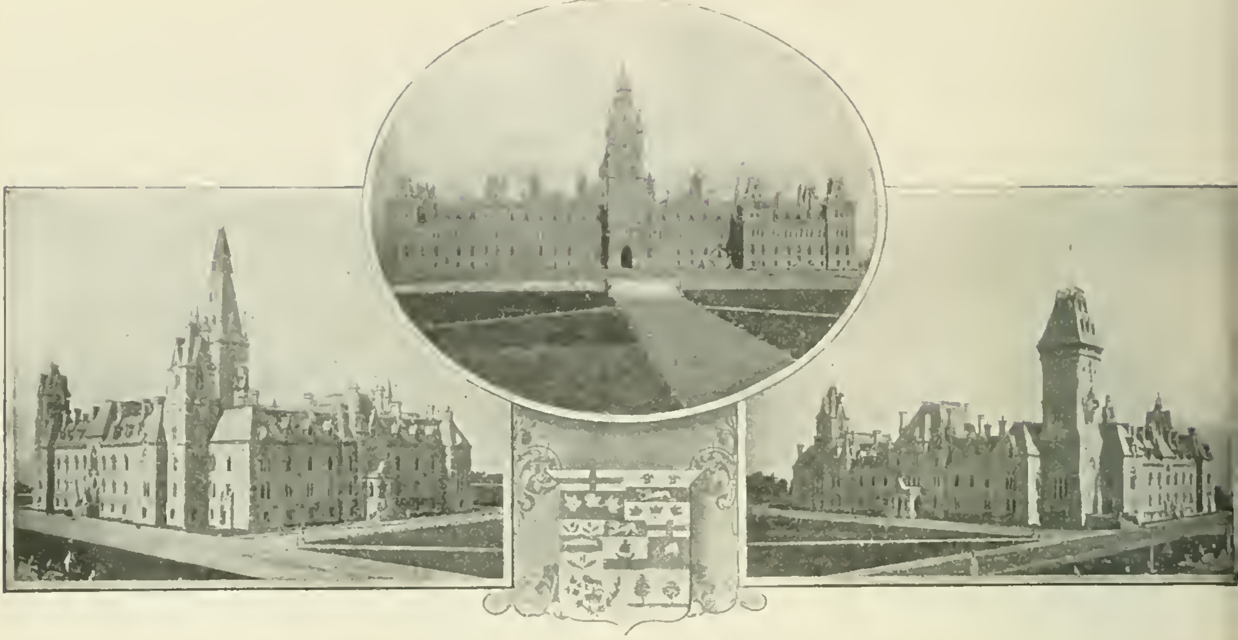
10. The West Indies.

South-east of Florida lie several groups of islands, known as the West Indies. These consist mainly of huge banks of shell and coral limestone. Only small parts of the great banks rise above the water.

The larger islands of the West Indies are mostly the upper portions of mountainous country that has been partly drowned. The flooded valleys in this region form many large and deep harbors. Many of the small islands stretching in a chain to the northern coast of South America are almost wholly volcanic.

The large islands, Cuba, Hayti, Jamaica and Porto Rico, are called the Greater Antilles, the smaller West India islands are called the Lesser Antilles.

Note. — The West Indies are not really parts of the coastal plain, but owing to their position, they may be studied here.



Dominion Parliament Buildings, Ottawa.

DOMINION OF CANADA.

NOTE.—The physical description of Canada has been given under "North America."

1. Map Studies.

Write in detail the southern boundaries of Canada. What parallel of latitude forms this boundary for a considerable distance?

Name the three oceans that bound Canada. Name two oceans between Canada and Russia. *See map page 4.* On which coast are there the fewest large bays? Why?

Name the Great Lakes between Canada and the United States. Which of the Great Lakes is wholly in the United States? What river is the outlet of the Great Lakes?

What does the relief map of Canada show about the surface of Canada? Find the names of the two great mountain chains of British Columbia. *See map page 55.*

Which country has the greater number of lakes, United States or Canada? Why are there so many small lakes in one country and so few in the other?

What is the greatest Canadian river west of the Rocky mountains? Locate the Mackenzie and Saskatchewan rivers. What three large lakes are drained by the Mackenzie river? What two great rivers flow into Lake Winnipeg? What river connects Lake Winnipeg with Hudson Bay? Which are the largest three rivers that flow into Hudson Bay? Into what does the Peace river flow? In what territory is the Mackenzie Basin?

In what belts of temperature is Canada? *See pages 23 and 24.* Why is the western coast much warmer than the eastern coast?

What large bay runs into the north-eastern part of Canada? Why are there no great ocean routes through Hudson Straits? *See page 52.*

On what river is Montreal situated? Quebec? Ottawa? Fredericton? On what two rivers is Winnipeg situated?

What provinces of Canada lie wholly or partially farther south than a considerable part of the United States?

What large island is in the mouth of the St. Lawrence river? At the mouth of the Gulf of St. Lawrence?

What island forms a whole province of Canada? What is the most important Canadian island in the Pacific? Name the chief Canadian islands north of Vancouver Island.

What part of the United States lies north-west of Canada? What large island is separated from Canada by Baffin Bay?

Draw a relief map of Canada showing its highlands and slopes. Draw a map of Canada and place on it: Lakes—Superior, Huron, Erie, Ontario, Winnipeg, Athabasca, Great Slave, Great Bear, Reindeer and Woods; Rivers—St. Lawrence, Mackenzie, Saskatchewan, Red, Assiniboine, Fraser, Yukon, Churchill, Nelson, Peace, Albany, Ottawa and East Main; Straits—Davis, Hudson, Belle Isle, Canso, and Juan de Fuca.

Draw a map of Canada showing the provinces and territories, with their capitals.

Indian Tepee.

Blackfeet Indian Sun Dance.

2. Canada Past and Present.

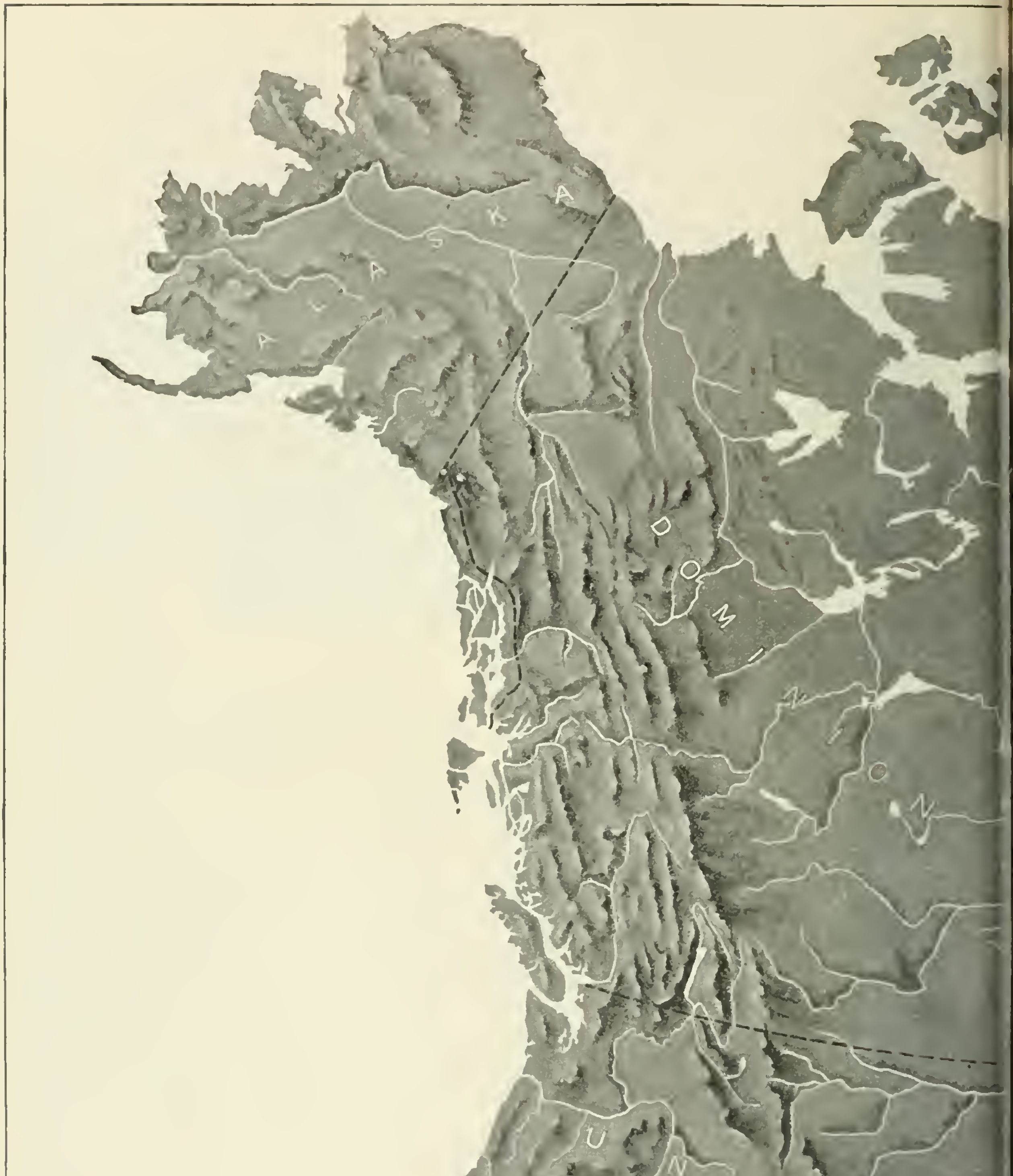
A little more than four hundred years ago there was not a white man in the two Continents of America. Canada was then a vast solitude of untilled plains, unbroken forests and lonely mountains. Here and there, by lake or stream, or on the inaccessible brow of a wooded hill, stood a little stockaded town of well- built "lodges," surrounded by a strip of tilled land growing pumpkins and corn; for, some of the forest Indians, such as the Iroquois, Hurons, and certain tribes of the great Algonquin family, had made some progress towards a rude civilization of their own. The rest of the tribes dwelt in wigwams of bark beside their favorite streams. The present Indian population of Canada is about one hundred thousand.

Indian Totem Poles

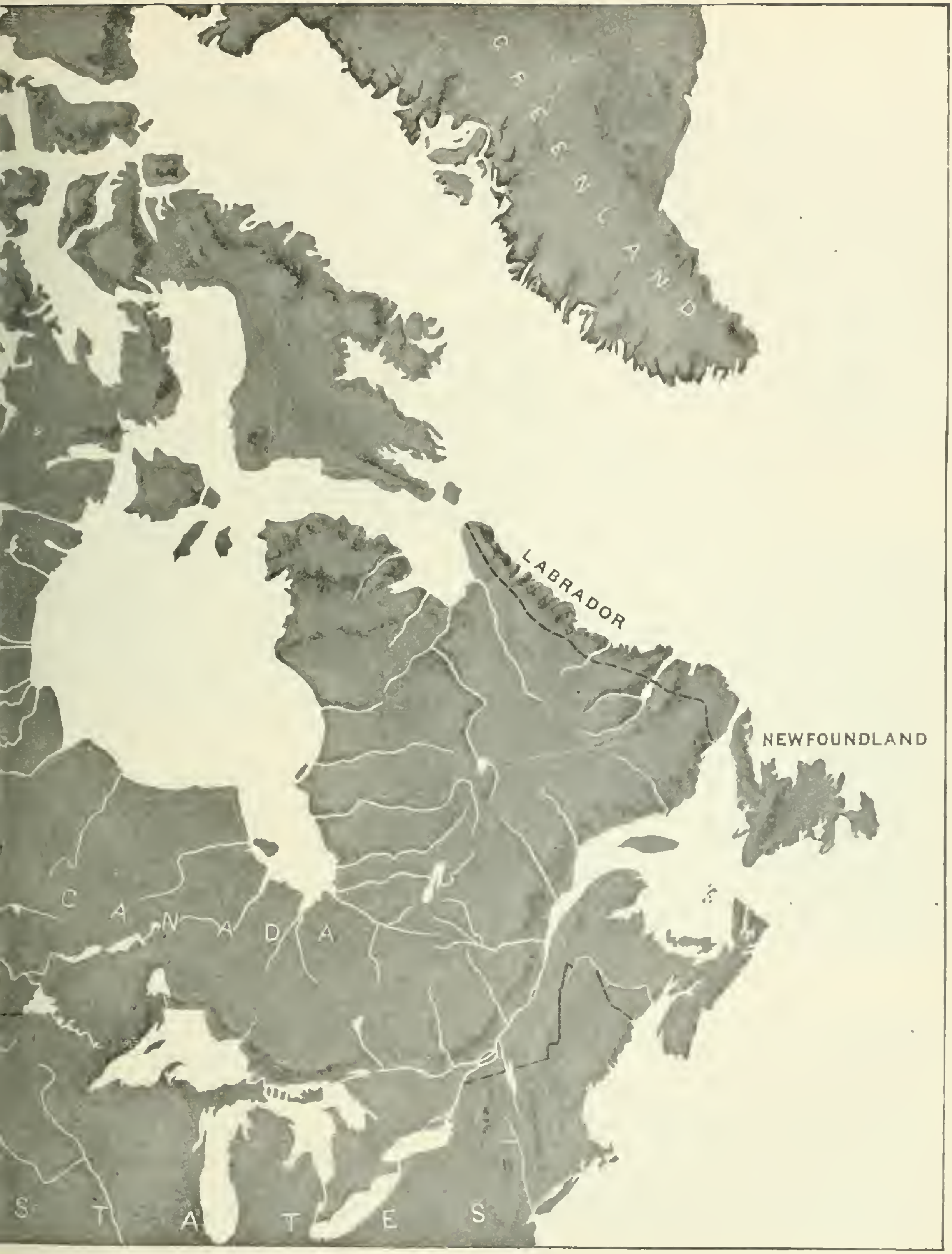
To-day Canada is occupied from ocean to ocean by more than six millions of people. The camping grounds of the Indian by lake or portage trail, have become the sites of populous cities, loud with the hum of factories and the bustle of trade. The lakes and rivers are thronged with the ships of a busy and growing commerce. Large districts which once seemed only a wilderness of rock and scrub, are yielding vast treasures of gold, silver, iron, coal, copper, nickel, plumbago, and other riches of the mine. Canada has become the richest and most powerful of the great colonies of the British Empire.

3. Area.

Canada forms about one-third of the whole British Empire, and is only a little less in size than the whole continent of Europe. The continental portion of the United States, without the territory of Alaska, is



RELIEF MAP OF



ON OF CANADA.

smaller than Canada by about four hundred thousand square miles. In other words, if the United States, without Alaska, were placed upon Canada, British Columbia and half of Alberta would be left uncovered. The one Canadian Province of British Columbia is larger than the European countries of France, Italy, Portugal and Switzerland, taken together. Germany and Switzerland taken together are smaller than Ontario. Nova Scotia is the smallest but one of the provinces of Canada, but it is larger than Switzerland, Holland, Greece, or Denmark. The rivers and lakes of Canada cover so vast an area that if the whole of Great Britain and Ireland were sunk in them there would be nineteen thousand square miles of water left unfilled. If Canada were in the form of a square, a man walking twenty miles a day could not travel once around it in a year.

Looking down the Fraser, near Yale.

There are large tracts of Canada which, owing to the climatic and other conditions, can never be available for agricultural purposes, but some of them, such as the Yukon, are rich in minerals.

4. Climate.

Canada lies chiefly in the cool belt, extending on the north into the cold belt. *See maps on pages 23 and 24.*

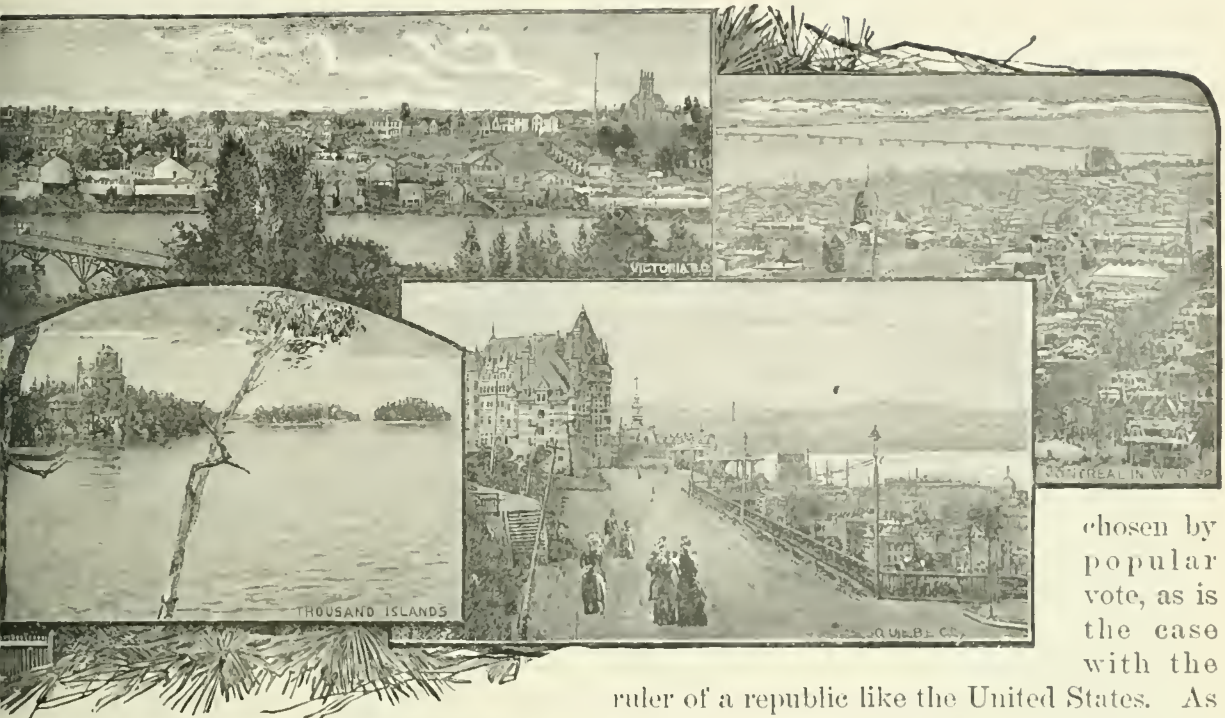
We may roughly divide Canada, in respect to climate, into three general sections: (1) an eastern region extending almost as far west as Manitoba, and including all the older provinces; (2) an inland region from east of Manitoba westward to within a short distance of the Pacific coast, embracing Manitoba, the North-West Territories, and the greater part of British Columbia; (3) the Pacific Coast region.

Lake Louise, Alberta.

The first division is characterized by ample rainfall, and by a great range of temperature. Its summers are hot; its winters severe.

The second division is characterized by a wide range of temperature, as in the eastern region, but the rainfall here is somewhat restricted. Some of the central and southern sections are apt to suffer from drought.

The third includes a narrow belt along the Pacific Ocean. Here the climate is not subject to so much change, and the rainfall is abundant. Even in winter, the temperature is moderate,



ong the coast as far north as Alaska, on ccount of the currents from the equatorial rt of the Pacific Ocean, and the warm esterly winds.

The Province of Alberta has a more equable imate than any other part of Canada east of e Rocky Mountains. Cattle can live here n the Great plains in winter. The warm hinook winds from the Pacific find their ay over the mountains, and modify the temerature of this district.

Canada is a land of sunshine, as the following statement shows:—

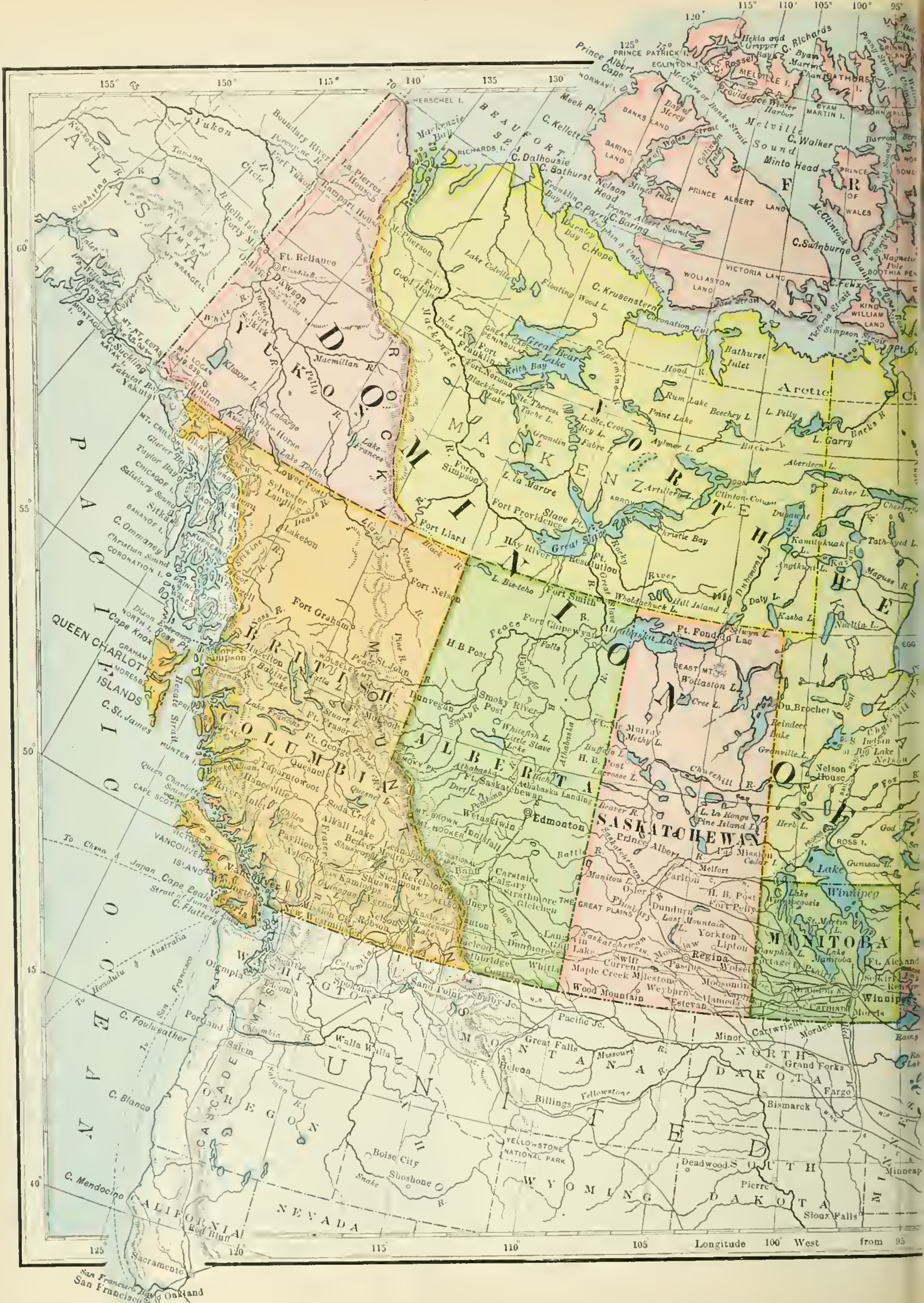
Annual percentage of sunshine at Fredericton, 44; t Montreal, 46; at Toronto, 44; at Winnipeg, 46. In ngland the percentage ranges between 25 and 36

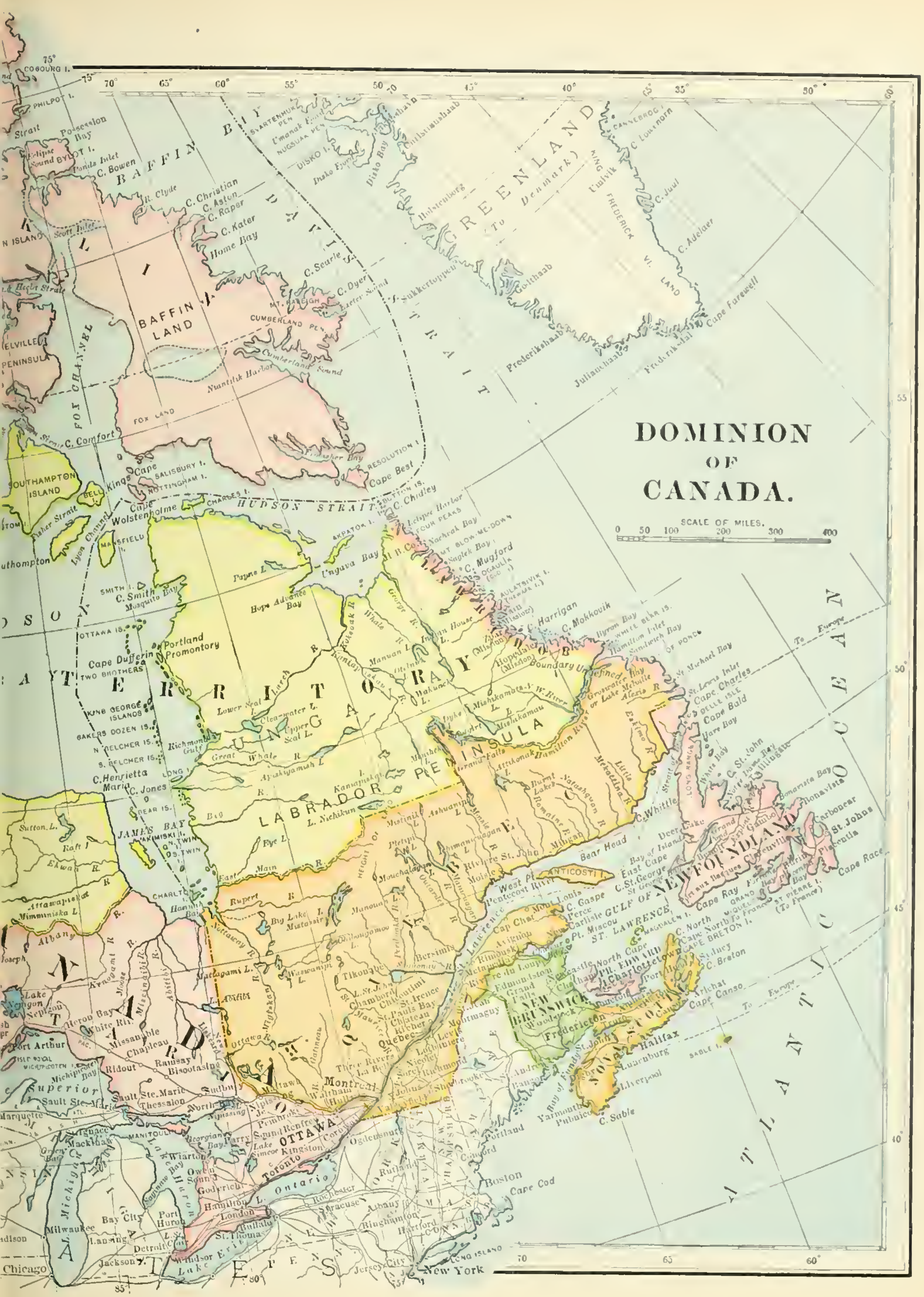
5. Government.

It is important for every one who will some ay become a Canadian citizen to know some-hing of the Government of the country in hich he lives. At the head of our affairs, as ell as of the whole British Empire, is the overeign—now King Edward VII. He wears is crown by right of inheritance and is not chosen by popular vote, as is the case with the ruler of a republic like the United States. As Canada is a colony of Great Britain, the chief executive of Canada is the representative of the British Sovereign. He is called the Governor-General. Imperial control over Canada is limited to the settling of International affairs, disputed cases of law, and matters involving the relation of Canada to other parts of the Empire.

In all matters relating to local affairs Canadians enjoy full powers of self-government, and are not subject to any interference from the Mother Country. In everything pertaining to taxation and expenditure we are independent.

Canadian Pacific Steamer.

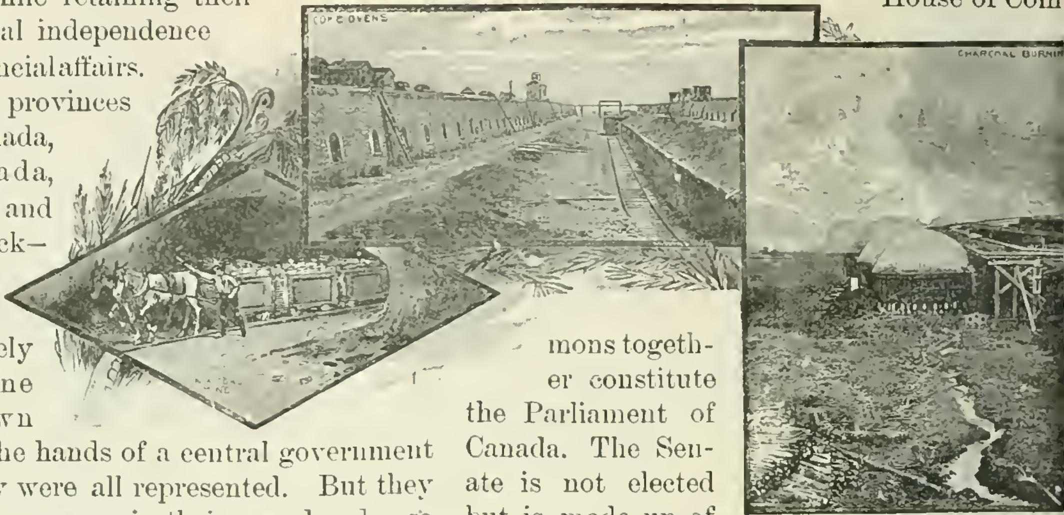

DOMINION OF CANADA
ALASKA
YUKON
MACKENZIE
NORTH WEST
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ROCKY MOUNTAINS
PACIFIC OCEAN
UNITED STATES
WASHINGTON
OREGON
MONTANA
IDAHO
WYOMING
NEVADA
CALIFORNIA
NORTH DAKOTA
SOUTH DAKOTA
BEAUFORT SEA
Arctic
QUEEN CHARLOTTE ISLANDS
VANCOUVER ISLAND
PRINCE PATRICK I.
MELVILLE I.
BANKS LAND
PRINCE ALBERT LAND
VICTORIA LAND
WOLLASTON LAND
KING WILLIAM LAND
PRINCE OF WALES
Melville Sound
McClintock Channel
Coronation Gulf
Bathurst Inlet
Great Bear Lake
Great Slave Lake
Athabaska Lake
Lake Winnipeg
Lake Winnipegosis
Lake Manitoba
Reindeer Lake
Wollaston L.
Dawson
Ft. Selkirk
White Horse
Fort McPherson
Fort Good Hope
Fort Norman
Fort Franklin
Fort Simpson
Fort Providence
Fort Liard
Fort Nelson
Fort Resolution
Fort Smith
Fort Chipewyan
Ft. Fond du Lac
Fort Graham
Ft. St. John
Dunvegan
Ft. George
Quesnel
Hanceville
Kamloops
Revelstoke
Nelson
Vancouver
Victoria
New Westminster
Prince Rupert
Edmonton
Calgary
Banff
Macleod
Lethbridge
Prince Albert
Regina
Moose Jaw
Swift Current
Maple Creek
Yorkton
Battleford
Winnipeg
Seattle
Tacoma
Olympia
Spokane
Portland
Salem
Helena
Great Falls
Billings
Boise City
Shoshone
Deadwood
Pierre
Sioux Falls
Bismarck
Fargo
Grand Forks
Minot
Red Bluff
Sacramento
San Francisco
Oakland
YELLOWSTONE NATIONAL PARK
C. Mendocino
C. Blanco
C. Foulweather
C. Flattery
Cape Scott
To China & Japan
To Honolulu & Australia
To San Francisco
Longitude 100° West from
155° 150° 145° 140° 135° 130° 125° 120° 115° 110° 105° 100° 95°
60° 55° 50° 45° 40°



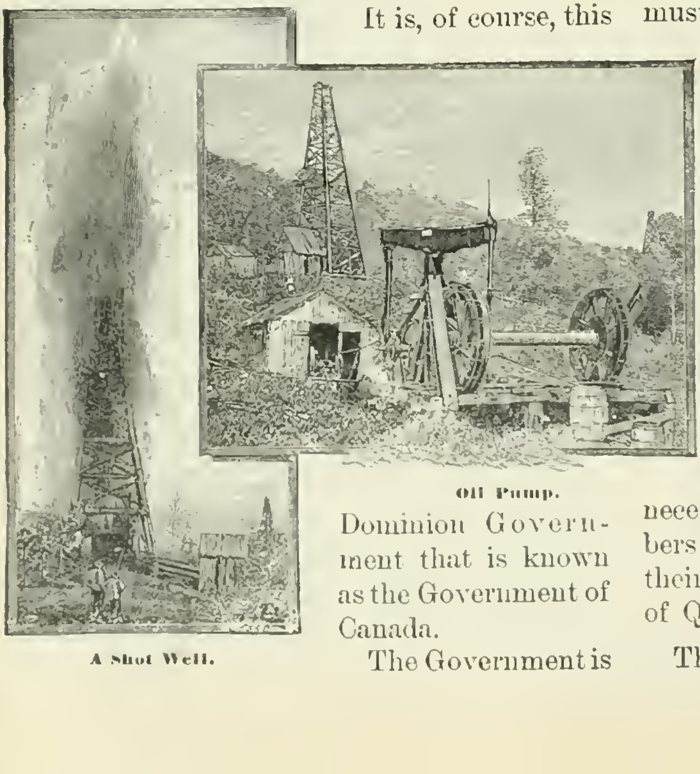
DOMINION OF CANADA.

SCALE OF MILES.

Canada is governed on what is known as the Federal System. It is made up of a number of provinces, which have federated, that is, entered into a kind of close partnership for mutual advantage, while retaining their own individual independence in local, provincial affairs. When the old provinces—Upper Canada, Lower Canada, Nova Scotia, and New Brunswick—decided on Confederation, they freely gave up some of their own powers into the hands of a central government in which they were all represented. But they retained other powers in their own hands; so that Canada is in reality governed by a number of what are known as Provincial Governments, dealing with the local affairs of the several provinces, and a central or Dominion Government at Ottawa, which deals with the affairs of the Dominion as a whole.



It is, of course, this Dominion Government that is known as the Government of Canada.


Oil Pump.

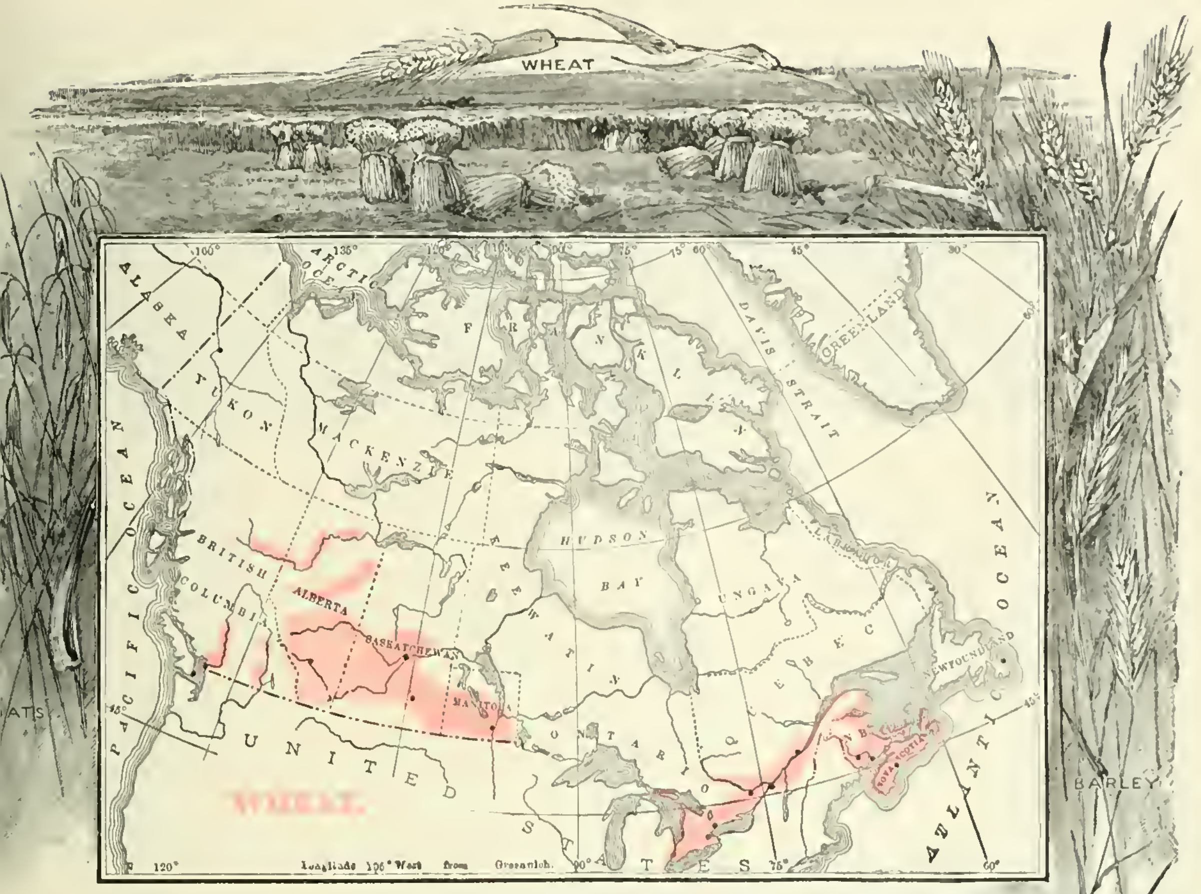
A Shot Well.

The Government is made up of four factors:—(1) The Governor-General, (2) The Executive Council or Cabinet, (3) The Senate, (4) The House of Commons.

The Governor-General, the Senate and the House of Commons together constitute the Parliament of Canada. The Senate is not elected but is made up of members appointed by the Governor-General acting on the advice of his Cabinet. They hold their positions for life, unless they resign, or in some way become disqualified. Each Senator must be a British subject, must live in the province he represents, and must own property to the value of at least $4,000.

The House of Commons directly represents the people. Its members are elected by the people. They serve for a term of five years, unless the House is dissolved by the Governor-in-Council in the meantime. Each member must be a British subject. The various provinces of the Dominion are represented in proportion to their population. The representation of Quebec is fixed at sixty-five and after each decennial census the representation of the other provinces is changed, if necessary, so that the number of their members of parliament shall bear the same ratio to their population as sixty-five to the population of Quebec.

The Cabinet, or Executive Council, which has



actual control of the country in its hands, sists usually of thirteen members. These the leaders of the party which has the jority in the House of Commons. Most of m are chosen from the House of Commons, l upon appointment, must go back for re- tion, that the people may have a chance to whether they approve of the appointments not. The other members of the Cabinet are sen from the Senate. The head of the inet is called the Premier or Prime Minister, l he is for the time practically the ruler of nada. He is the leader of his party in Par- ment, and almost always is a member of the use of Commons. He may, however, be a mber of the Senate instead; just as the me Minister of Great Britain may belong her to the House of Lords or the House of mmons. The members of the Cabinet are the heads of the departments of public service, and are known as the Ministers of Justice, Public Works, Finance, Militia and Defence, Railways and Canals, Agriculture, Trade and Commerce, Marine and Fisheries, Interior, Customs, Inland Revenue, the Secretary of State, and the Postmaster-General. Sometimes the Premier holds no other office than that of President of the Council. In addition to the members named, there are sometimes members of the Government without portfolios.

When a government no longer commands the confidence of a majority of the House of Commons, it goes out of power, and a new government is formed from the members of the opposing party. The Governor-General may, if he thinks fit, first order the election of a new House.

6. Canada Commercially and Industrially.

Canada is rapidly taking its place as one of the great producing countries of the world. Although Canada ranks ninth among the nations in the number of its commercial vessels, these vessels are not able to carry all the Canadian trade. Many British vessels are engaged in carrying Canadian products to the United Kingdom and bringing back foreign goods to Canada.

Cattle Ranch near Calgary.

The principal industries of Canada are Agriculture, including grain production, fruit growing, stock raising, dairying, and other work connected with the cultivation of the soil, Lumbering, Mining, Fishing, the Fur Trade, and Manufacturing.

Thrashing in Manitoba.

Harvesting in Manitoba.

7. Agriculture

Agriculture holds the first place among Canadian industries

Grain-growing is the chief department of agricultural work. All the most useful grains can be grown in Canada, but certain parts of our country are especially suited to the growth of wheat. The wheat of Manitoba and the North-West takes a leading place in the British market. Wheat grown at Fort Chipewyan, in latitude 58, took a prize at the Centennial Exhibition.

Among the chief wheat regions in Canada are the following: Ontario between Lake Huron and Lakes Erie and Ontario, and eastward to the Ottawa, the Province of Manitoba, and the Provinces of Saskatchewan and Alberta. In almost every other inhabited part of the Dominion, however, wheat is grown in large quantities. It is a staple farm product of Nova Scotia, Quebec, and Prince Edward Island. In New Brunswick it is grown for home consumption. Wheat farming in Manitoba and the North-West Provinces is conducted on an immense scale, sometimes by the aid of steam ploughs, and usually with the finest agricultural machinery, which reduces the cost of production, and makes up for the cost of getting the wheat to far-off markets.

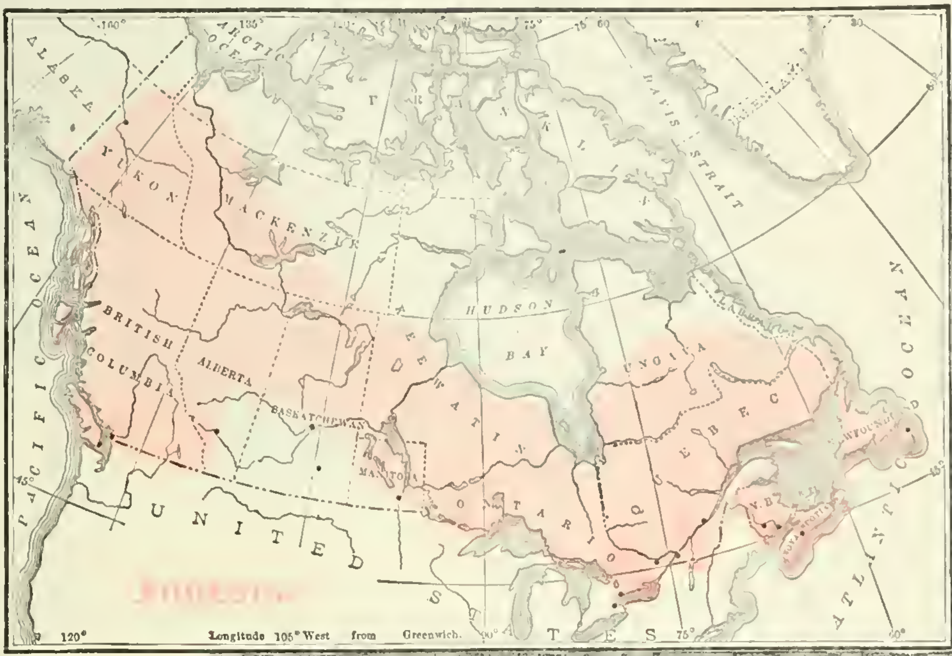
The bulk of the wheat trade of Canada is conducted by a few large firms, whose warehouses or elevators are built at many stations in Manitoba and the North-West Provinces, and in the railway towns and lake ports of Ontario.

Wheat-flour milling is an important Canadian industry and the product finds a ready market not only throughout the Dominion, but in Great Britain, China, Japan and Australia.

Stock and Dairy Products.—Cattle are not native to any part of America, but they now thrive in almost every part of Canada where there is good grass land. In

Plowing in Manitoba.

ery province of the Dominion there are great num-
ers of cattle, while in the western territories are to
found immense cattle ranches, where thousands of
em are owned by one "rancher," as the big cattle
rmers are called. Every year great numbers of these
ttle are sent to eastern cities, or exported to supply
e markets of Great Britain and other countries.



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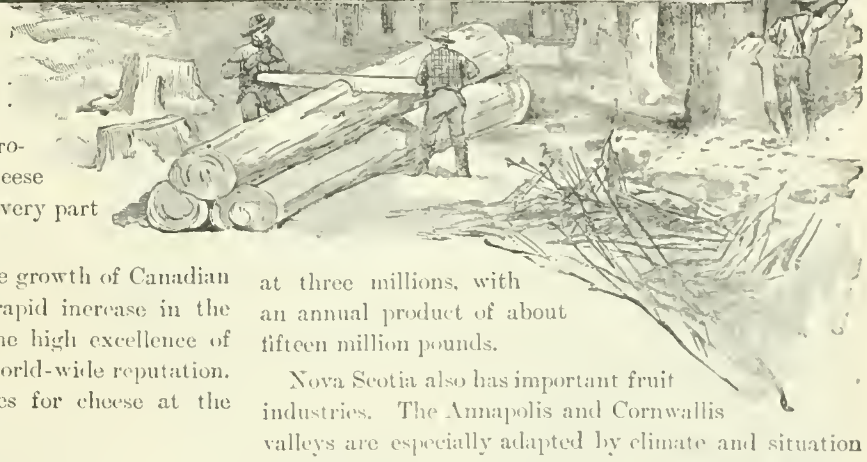


Butter, cheese, and milk are
iown as dairy products. On-
rio ranks first among dairy pro-
nces; but milk, butter and cheese
e valuable products in almost every part
the Dominion.

Nothing shows more clearly the growth of Canadian
ade in recent years than the rapid increase in the
ports of butter and cheese. The high excellence of
anadian cheese is winning it a world-wide reputation.
anada took nearly all the prizes for cheese at the
orld's Fair in Chicago, 1893.

Fruit-Growing.—Small fruits are grown in abun-
ance in nearly every province in Canada. Though the
inter in some parts is too severe for the successful
owth of the larger kinds, yet the fruit industry, as a
hole, has become an important department of agri-
ılture.

The Province of Ontario is an excellent fruit-growing region. The area in orchards is not less than 320,000 acres. The number of apple-trees of bearing age, if planted in a row twenty-five feet apart, would reach around the world. In the Niagara peninsula, and along the shores of the western part of Lake Erie, peaches are grown very successfully. Grapes are also grown in large quantities, the number of bearing vines being estimated at three millions, with an annual product of about fifteen million pounds.

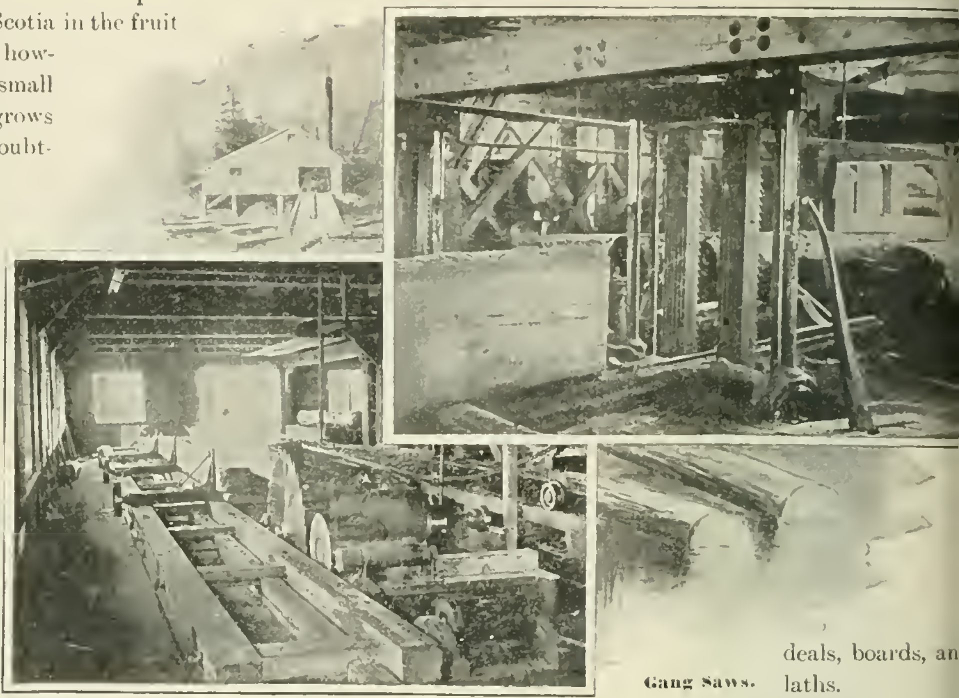
Nova Scotia also has important fruit industries. The Annapolis and Cornwallis valleys are especially adapted by climate and situation for the growth of large fruits. Here the choicest varieties of apples, pears, plums, and cherries are produced in abundance.

In 1904 Canada exported 1,573,744 barrels of apples, valued at $4,379,826, to Great Britain. These were chiefly grown in Ontario and Nova Scotia. The export of canned fruits is rapidly becoming an important industry

None of the other provinces compete with Ontario and Nova Scotia in the fruit trade. New Brunswick, however, produces excellent small fruits. British Columbia grows good fruits, and will doubtless become a fruit exporter, and the Island of Montreal is famous for its apples, pears, and plums.

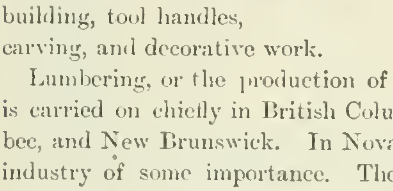
8. The Lumber Trade.

Canada is one of the chief lumber producing countries of the world. We produce in vast quantities all the varieties used in the building of houses, railroads, ships, and bridges, as well as those needed for carriage-building, tool handles, carving, and decorative work.



Saw Mill. Circular Saw. Gang Saws.

Lumbering, or the production of timber of all kinds, is carried on chiefly in British Columbia, Ontario, Quebec, and New Brunswick. In Nova Scotia also it is an industry of some importance. The coniferous or cone-bearing trees, of which the white pine, spruce, larch, Douglas fir, cedar and hemlock, may be specially mentioned, yield the greater part of the timber. Maple, beech, birch, walnut, butternut, hickory, ash, basswood, oak, elm, and other deciduous trees add their share. A large proportion of all the timber cut is exported as logs, or in some partially manufactured form, such as squared timber, deals, boards, an laths.

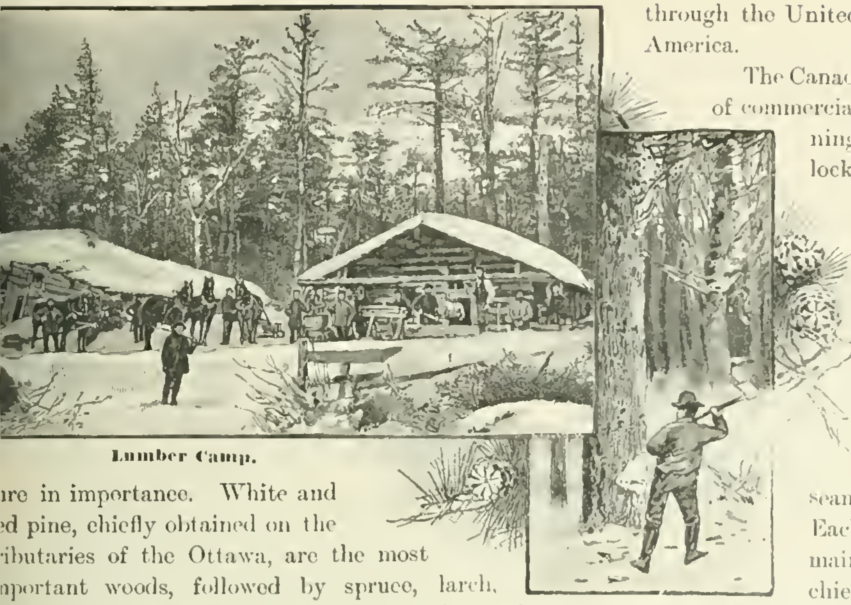


Giant Cedar, B.C.

The chief forest regions c Canada are three in number (1) the western region extending from the Rocky Mour tains to the Pacific Ocean ; (2) the eastern region reacl ing from Ontario to the Atlantic, and (3) a sub-arcti tract situated north of the prairie lands of Manitoba an the North-West Provinces. The forests of these di tricts are almost inexhaustible, under judicious forestr laws. Timber in its various forms makes up the greate part of the exports of New Brunswick, most of the output going to Great Britain. Spruce is the most important product of the New Brunswick forests, but whit pine, birch, larch, maple, and cedar are abundant, an the gathering of hemlock bark for tanning purposes is considerable industry.

Spruce logging, as it is called, is carried on chiefl in winter in New Brunswick. The inhabitants of th back settlements are occupied with farming in the summer, but in winter they go to the woods. Througl December, January, February, and March their axe are busy felling the spruce trees, and cutting them int logs, which their teams of horses drag to the banks o the nearest streams. In spring, when the melting snow turn these streams into torrents, the logs are carrie down to the saw mills about the mouths of the chie rivers.

In Quebec the lumber trade stands next to agricul



Lumber Camp.

re in importance. White and ed pine, chiefly obtained on the ributaries of the Ottawa, are the most nportant woods, followed by spruce, larch, edar, birch, maple and other woods. The lumbering perations are carried on as in New Brunswick.

In Ontario, as in Quebec, the lumbering industry ands next to agriculture in importance, and the forests e similar to those of Quebec.

In British Columbia lumbering is carried on for local urposes in the interior, but much more extensively on e coast, where there are large saw-mills cutting for xport. The most important tree is the ouglas fir, which frequently attains a eight of from two to three hundred feet, ith a diameter of from eight to ten feet. he western cedar is another valuable imber tree of British Columbia. Most of he lumber is exported to various places n the coast of the Pacific Ocean.

In cutting these huge trees of the Paci- c Coast, the axe of the Eastern lumber oods proves insufficient, and the great ross-cut saw largely takes its place.

The export lumber and timber trade of anada is about equally divided between hipments to Great Britain and the United tates. The figures for the year ending une 30th, 1904, are :—

xports to Great Britain	$15,787,385
xports to United States......	$14,915,793

considerable part of the lumber reported s shipped to the United States is really sent through the United States to the countries of South America.

The Canadian forests yield many other trees of commercial importance. A valuable tanning substance is obtained from hemlock oak and other trees; and tar and resin, turpentine and other oils, are produced from pine trees. Large quantities of timber are made into wood pulp for the manufacture of paper.

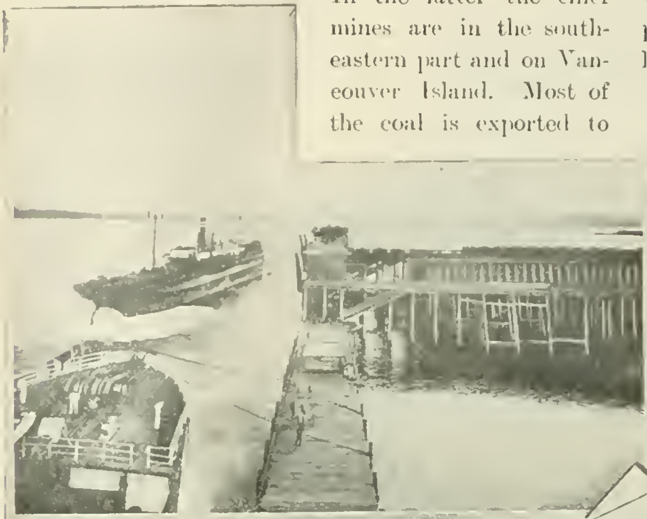
9. Coal.

Coal is dug from layers in the earth. These are called seams and have a wonderful history. Each of them is made up of the remains of a vast number of plants—chiefly ferns and mosses. Coal beds are from a few inches to several feet in thickness.

Coal is used chiefly for fuel. It has several other uses, however. From coal we get coal-tar, paraffine oil, and many of our most beautiful dyes such as mauve, magenta, violet, a number of useful drugs and chemicals, and what is still more curious, many of the finest essences used in flavoring sweets and making perfumes. Thus coal is seen to be a mineral of widely varied utility.

Coal Breaker.

In Canada there are numerous coal-fields, some of them of very great importance. The most productive mines are found in Nova Scotia and British Columbia. In the latter the chief mines are in the south-eastern part and on Vancouver Island. Most of the coal is exported to California. In Nova Scotia the principal coal-fields are those of Pictou and Cumberland counties and the eastern part of Cape Breton. The coal from these mines is shipped to the neighboring parts of the Dominion, and also to the New England States. In New Brunswick the coal seams are thin, and are worked only on a small scale for local purposes. Quebec is at a disadvantage in containing no coal-fields, the coal required for manufacturing purposes being brought chiefly from Nova Scotia. The absence of coal-fields in Ontario is compensated to some extent by the existence of petroleum, which is obtained in large quantities in the south-western part of the Province.


Loading Coal at Nanaimo.

No. 1 Shaft, Nanaimo Colliery.

The coal area of the North-West Provinces is extensive, though the mines are as yet but little worked. Much of the North-West coal is of an inferior quality called lignite, which is useful for local purposes, but does not bear transportation well.

When hard coal or anthracite is taken from the mines much of it is in large lumps. These could not well be used in that shape, so they are crushed between heavy steel rollers in great buildings constructed for the purpose. Such a building is called a breaker. In the illustration on page 79 you will notice a number of boys seated at work. They are picking pieces of slate from the coal as it slides down a long trough or chute from the rollers.

10. Gold.

Gold and silver are called precious metals. Gold is one of the most valuable minerals found in the world, and the search for it has always called forth the spirit of adventure. It is found in a pure state, either distributed in veins of quartz rock, or in gravel beds formed by the action of water in slowly wearing down the quartz. It is also found united with other metals.

When gold is found in veins, the quartz is crushed by heavy machinery called stamping mills, and the gold separated by a chemical process. When it is found in river-beds, it is usually in the form of gold dust, and is separated from the sand and gravel by washing. The latter method is called "placer" mining.

In Canada there are numerous gold-fields. The most important of these are found in Nova Scotia, Ontario,

Hydraulic Mining.

Mining Town.

A Smeltery.

nd British Columbia. The most valuable district of ll, commonly known as the Klondike, has been re-ently discovered in the Yukon district even within he Arctic circle.

In Nova Scotia the gold mines are in a bed of old laty or quartzite rocks, situated on the Atlantic slope f the peninsula—the gold being obtained from quartz hich has to be mined and crushed. In his province the annual product since 1861 as averaged about $390,000; and the hole amount of gold produced up to 1904 s nearly $17,000,000.

What gold there is in Quebec is found on e Chaudiere river and its tributaries. But mparatively little work has been done on ese mines—the whole product amounting nce 1862 to about $300,000.

Gold was first found in Ontario about 866, but up to 1896 the mines were little orked. The chief gold region is a strip f land about two hundred and fifty miles ng, and about half as broad, lying to the est and north-west of Lake Superior. old has also been found in Hastings county. In 1895 the output in Ontario was valued at $62,000. In 1903 it was over $188,000.

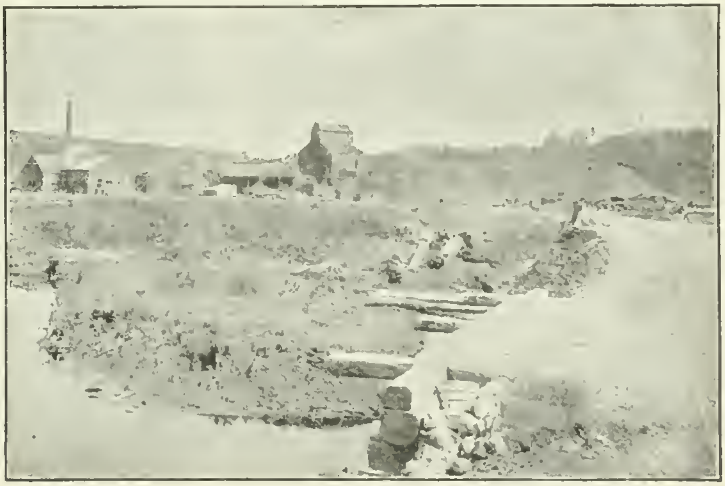
Gold mining on an extensive scale began in British Columbia in 1857. For a long time the chief source of gold was the Fraser river and its tributaries. In the year 1860 the output was over $2,000,000. In 1863 it reached a little less than four million dollars. Within the past few years gold bearing quartz has been discovered and mined in other sections of the province. Now the mines of the Kootenay, Boundary Creek and Cariboo districts are among the most valuable in the world.

The mines of the Yukon district are very rich. They are situated on the Klondike stream and other tributaries of the Yukon river, some distance east of the boundary line between Canada and Alaska.

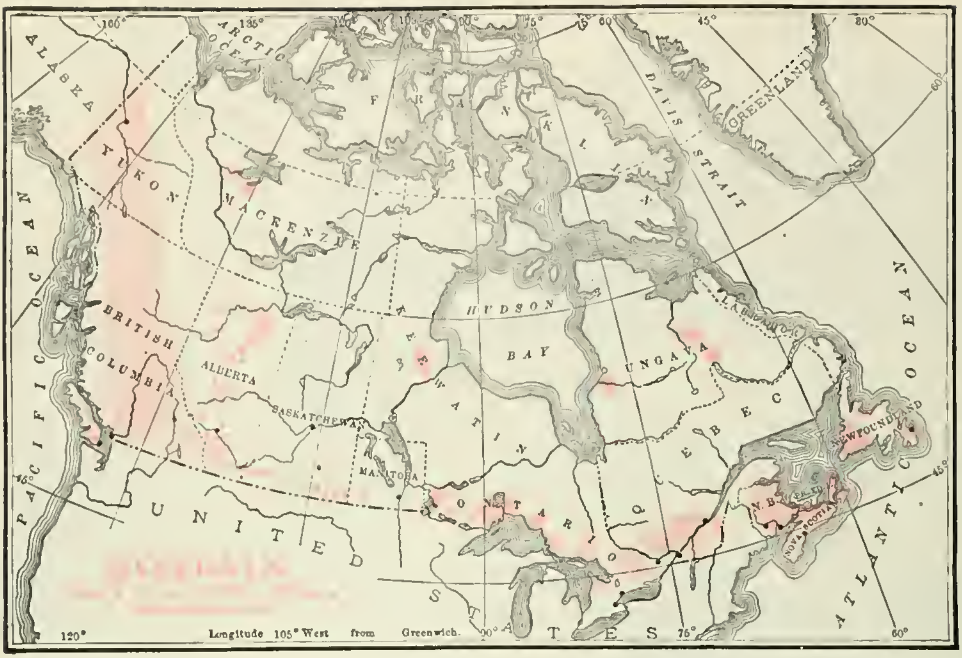
Dawson city, at the junction of the Klondike river with the Yukon, is the centre of the Yukon gold region. It has grown rapidly, and is a prosperous mining town. The climate is somewhat severe in winter, but warm in summer.

11. Other Minerals.

The mineral productions of Canada are of so varied a character that it is impossible to deal with each one separately. Nearly all the minerals of value, and



Nickel Mines, Sudbury, Ont.



utility in manufactures, are found in Canada. In coal gold, silver and lead, as we have seen, and in nickel, iron, lime, petroleum, salt, copper and asbestos, the resources of Canada are all but inexhaustible. There are also deposits of platinum, manganese, phosphates, gypsum, antimony and plumbago, and of almost all the other important minerals.

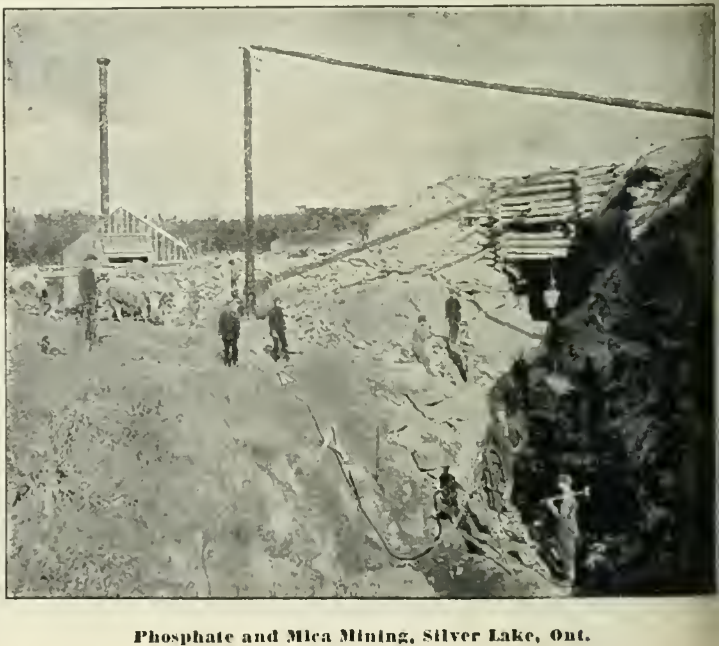
Silver is found chiefly in the Provinces of Ontario and British Columbia. In Ontario the richest silver district is along the shore of Lake Superior. In British Columbia the Slocan district of West Kootenay has recently come into great prominence as a producer of silver and lead.

Nickel is found in the province of Ontario in the vicinity of Sudbury, Algoma district, in larger quantities than in any other part of the world. With the growing use of this metal in combination with steel as a protective armor for battle-ships, the Canadian mines must become very valuable. Canada can supply all the nickel used in the world.

Copper occurs in Canada in two forms, as the native metal, and in combination with sulphur. The latter variety, called copper pyrites, is found in many places. Of the former, the richest veins are found along the north-eastern shore of Lake Huron, in the Sudbury district. The metal exists in large quantities along the shore of Lake Superior, as well as in various parts of British Columbia.

Petroleum is found in Ontario, Quebec, Nova Scotia, New Brunswick, and especially in the North-West Provinces, where there are very large oil regions comparatively unexplored. In the Arctic wilderness of the Mackenzie Basin there are vast petroleum fields. The best known oil wells in Canada are in the county of Lambton, Ontario. The oil wells in Lambton are from 350 to 500 feet deep. The quantity of refined oil produced in Canada in 1903 was about eight and a half million gallons.

The chief iron mines are in Nova Scotia, at Londonderry and Torbrook. There are large quantities of iron in Ontario in Hastings, Haliburton and Victoria counties. In Quebec the iron mines of Three Rivers


Phosphate and Mica Mining, Silver Lake, Ont.

'ur Seals.

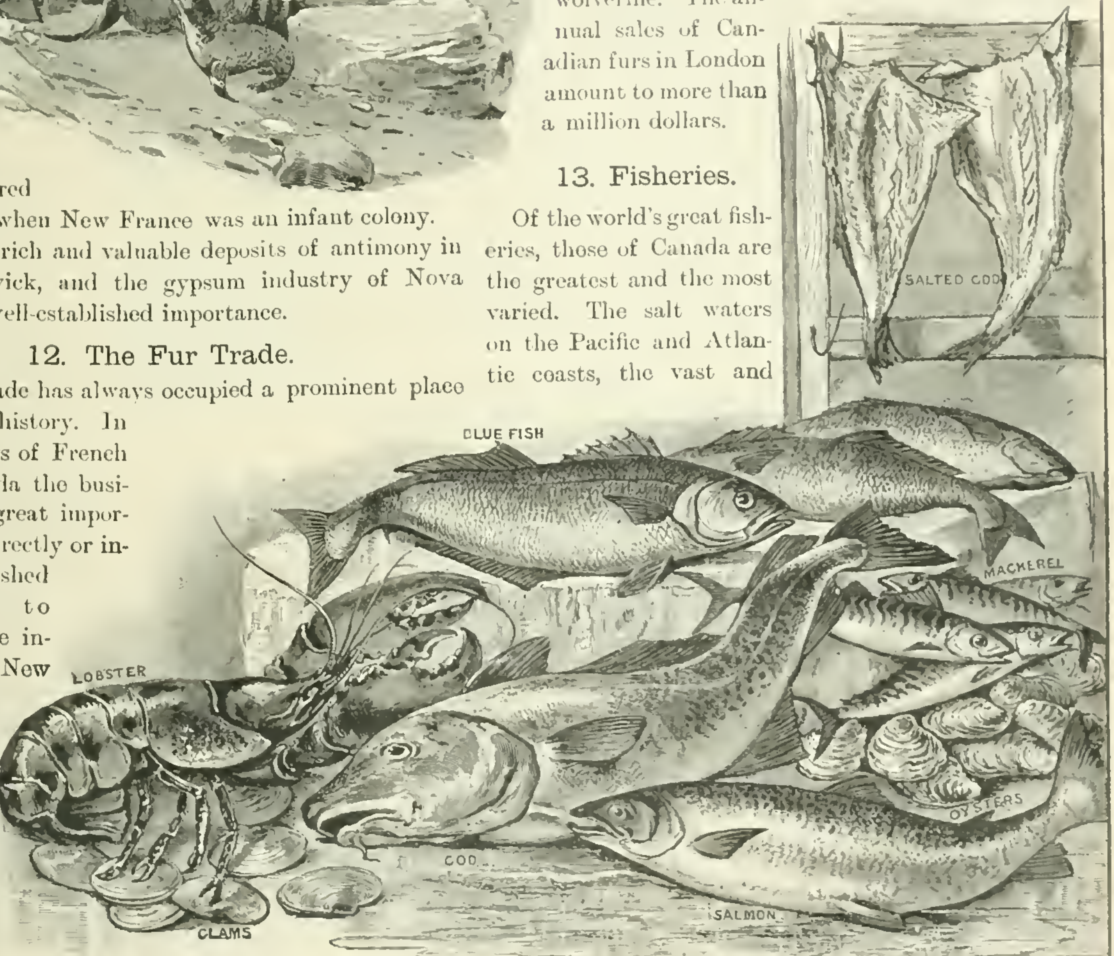
e discovered
worked when New France was an infant colony.
here are rich and valuable deposits of antimony in
Brunswick, and the gypsum industry of Nova
ia is of well-established importance.

12. The Fur Trade.

ho fur trade has always occupied a prominent place
Canadian history. In
early days of French
in Canada the busi-
s was of great impor-
e, and directly or in-
ctly furnished
upation to
rly all the in-
itants of New
ance.
ch of the
loratior
he coun
was done
the ad-
turous
hardy
-traders;
to them
chiefly belongs the honor of opening up those great inland waterways, which have had so much to do with the later development of Canada. In Canada the fur trade is inseparably associated with the history of the Hudson's Bay Company. This great Company had its forts established all over the North-West up to the Arctic Circle, and on the Pacific coast as well as in the Eastern centres of population. For nearly two hundred years it practically ruled the north-western part of Canada. Soon after Confederation its lands and special powers were purchased by the Canadian Government, and now it is simply a great trading corporation without political authority. It still holds posts in the North-West, and its ships come over every summer from London to gather the year's harvest of furs. The skins of chief commercial importance are those of the bear, badger, beaver, fox, mink, marten, muskrat, otter, raccoon, rabbit, wolf, and wolverine. The annual sales of Canadian furs in London amount to more than a million dollars.

13. Fisheries.

Of the world's great fisheries, those of Canada are the greatest and the most varied. The salt waters on the Pacific and Atlantic coasts, the vast and



Fishing Fleet at the Mouth of the Fraser River, B.C.

countless fresh water lakes, and the many rivers which make Canada a network of waterways, all teem with fish of commercial value. The importance of the inland and sea fisheries has rapidly increased during the last half century. In 1850 their annual value did not exceed $150,000. In 1859 the value had risen to $1,407,000—over nine times as much as in 1850. Ten years later it amounted to nearly $5,000,000. This rapid increase has continued until now the annual value of the fisheries amounts to over $21,000,000. An army of fishermen over 80,000 in number, possessing boats, nets and fishing gear, valued at $11,000,000, is now engaged in this trade.

Of the many fishing enterprises carried on in Canada, the salmon, lobster, and oyster industries are perhaps the most remarkable and interesting. Nine or ten million salmon are annually canned in British Columbia; while every year from eighty to one hundred million lobsters are packed in the factories of the Eastern Provinces. Of oysters, from 50,000 to 70,000 barrels are taken each year along the Atlantic coast. The cod, mackerel, white fish, lake trout, and herring fisheries are hardly less important. There are twenty-two governmental fish- and lobster-breeding establishments in Canada, devoted to the hatching of fry and the stocking of waters with fish and lobsters.

The fisheries are an object of incessant care to the Government, which protects them by armed cruisers and strict laws.

Very many differen methods are employe for the capture of fish The most common ar the "pound - nets, otherwise known a weirs or fish-traps, an the "drift nets." Th former are constructe with what is called "leader," which turn the fish from thei course and heads the into a staked enclosure or trap, out of whic they are unable to fin their way. The drift nets hang like a lon wall in the water, sus pended by floats an weighted at the bottom by lead. The fish in thei efforts to pass through are caught by the gills and hel fast.

14. Manufactures.

Canada has made rapid development as a manufacturing country. Most of the common articles an machines we use, from matches, pins, boots, and clothing to agricultural implements, engines, and mill-machinery are now made in our own country. The money investe in manufacturing in Canada amounts to about fou hundred million dollars, and more than one hundre million dollars are paid every year in wages to thos who work in Canadian factories and workshops.

Canada has such vast resources of raw material tha she has already begun to export largely not only th natural products of the farm, the forest, and the mine but manufactured goods also.

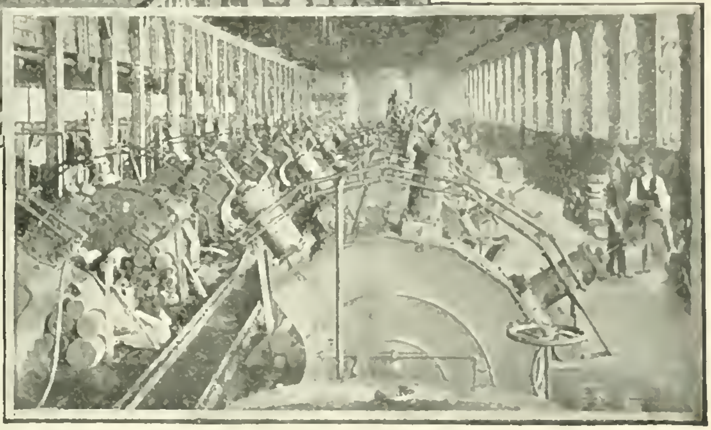
Kenora, Ont.

One of the most interesting and distinctive manufac- ures carried on in Canada is the preparation of wood- ulp, used in the making of paper. When we think of ll the books in the world, of the millions of newspapers rinted every day, and of the thousands of tons of wrap- ing paper used every year by merchants, we shall eadily understand that the making of paper must be n industry of immense importance.

ault Ste. Marie Pulp and Paper Co.

In times past rags, hich were bleached, aked, and ground to pulp, were the icf material used in e manufacture of per. It would be ite impossible now- lays to get enough rags for this purpose. per-makers are therefore compelled to seek her materials, among which are straw, the re of various plants, and wood-pulp. Of these, far the most widely used, is wood-pulp.

Wet Machine Room.



Grinder Room.

In the northern part of Ontario, in Quebec, d in the Maritime Provinces there are vast eas of spruce forest. This wood makes excel- nt pulp for the manufacture of paper. Most the paper used in the United Kingdom is made of the ood of the spruce-tree.

Wood-pulp is of two varieties. One is called the mechanical" or "ground-pulp," and is obtained by mply grinding up the spruce logs in water to a pulpy ass, and afterwards pressing this mass till it is dry ough to handle conveniently for shipment to the paper ills. The other variety is called the "chemical pulp." To obtain this the wood is cut into small chips, then boiled with lime and acid, and afterwards pressed like the ground pulp. The chemical pulp is much the more valuable, and is used in the manufacture of paper of superior quality, such as you find in the better class of books. There were thirty-nine pulp-mills in Canada in 1903, the value of their output exceeding $5,000,000.

The output of Canadian pulp-mills is about 275,000 tons per year. The value of the material ranges from about $15 a ton for the ground-pulp to two or three times that sum for the chemical pulp. On account of the superior qualities of the Canadian spruce,—the best for the purpose in the world,—there is no reason why, with the employment of ample capital and the introduction of the most modern machinery, Canada should not lead the world in the wood-pulp industry.

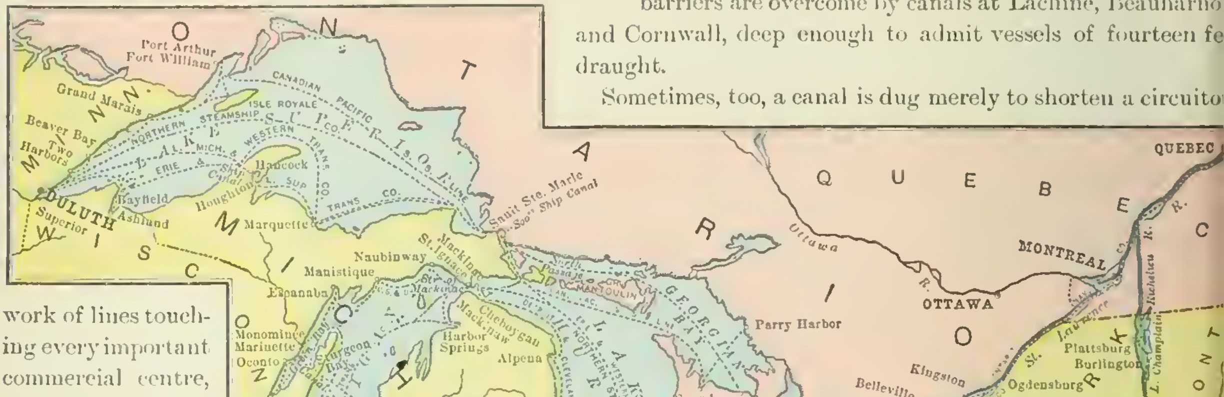
At present the greatest producer of wood-pulp is Norway. It supplies over sixty per cent. of the amount shipped into the United Kingdom.

Besides its use in the manufacture of paper, wood-pulp is capable of being employed for a great variety of purposes. Already it is manufactured into pails, tubs, barrels, doors and sashes, and it is thought that before long it will be used in producing imitations of rosewood and mahogany, in making car wheels, and even in constructing railway carriages and steamships.

Canada exports large quantities of agricultural implements to Europe, Australia, and South America.

15. Railways.

The growth and development of Canadian railways has been most rapid. The first Canadian railway was begun in 1832, and ran from La Prairie on the St. Lawrence to St. Johns on the Richelieu. In 1904 Canada had one hundred and seventy-eight railroads, with over twenty thousand miles of railway in operation, and this mileage is yearly increasing. In the matter of railway mileage this young country already ranks seventh among the nations of the world. Thirty years ago there was not a mile of railroad in Canada, west of the Province of Ontario. Now the great railway systems form a network of lines touching every important commercial centre, and reaching from Halifax on the Atlantic to Vancouver and New Westminster on the Pacific. As soon as any tract of land is discovered to be rich in minerals, or well fitted to agriculture, steps are taken to provide it with railway facilities. In this way the growth of railways has gone on hand in hand with the general development of the country.



Waterways of the Great Lakes.

Of the numerous railway systems in Canada, the four most important are the Canadian Pacific, the Grand Trunk, the Intercolonial, and the Canadian Northern.

By the building of the Canadian Pacific railway, finished in 1885, a trans-continental route has been established, and the vast fertile and mineral regions of Manitoba, the North-West Territories, and British Columbia, have been thrown open to settlers. This railway is of incalculable importance not only to Canada but to the Empire, forming as it does the great imperial highway between East and West. At both terminals it strongly fortified.

16. Canals.

Look at a map of Ontario and you will find th Lake Erie is connected with Lake Ontario by t Niagara river. But this river is barred by the gre cataract of Niagara, rendering it useless for navigatio To overcome this difficulty, and to open an unbrok waterway, the Welland canal was dug between the two lakes. The St. Lawrence river also, the gre waterway of Canada, is obstructed at certain points l rapids up which boats or vessels cannot pass. The barriers are overcome by canals at Lachine, Beauharno and Cornwall, deep enough to admit vessels of fourteen fe draught.

Sometimes, too, a canal is dug merely to shorten a circuito water route. The distance fro Kingston to Ottawa by way the St. Lawrence river and t Ottawa river, is little short three hundred miles. Looki again at the map of Ontario y will notice a canal which, begi ning at Kingston, passes through the Counties of Fr tenac, Leeds, and Grenville, and finally joins the Ride river. This is the Rideau canal. By this route t distance from Kingston to Ottawa is shortened to o hundred and twenty-six miles, of which only twenty-ni miles had to be artificially constructed. The remaini ninety-seven miles are made up by the Rideau rive Rideau lake, and other connecting bodies of water.

The first Canadian canal built was that at Lachin begun in 1821, to surmount the famous Lachine rapid The largest Canadian canal,—that is the one givi passage to the largest ships, is the Sault Ste. Mar canal, between Lake Superior and Lake Huron. Th has a depth of twenty-two feet, and a lock nine hundred feet long by sixty feet wide.

17. The Waterways of Canada

Canada contains the finest waterways in the world. The larger portion of fresh water on the globe is in our country. With only one trans-shipment freight may be carried more than two thousand miles from the Atlantic. Lakes and large rivers abound everywhere. The great lakes between Canada and the United States form by far the best inland system of water transportation to be found anywhere. The lakes of this system alone contain more than half the fresh water of the world.

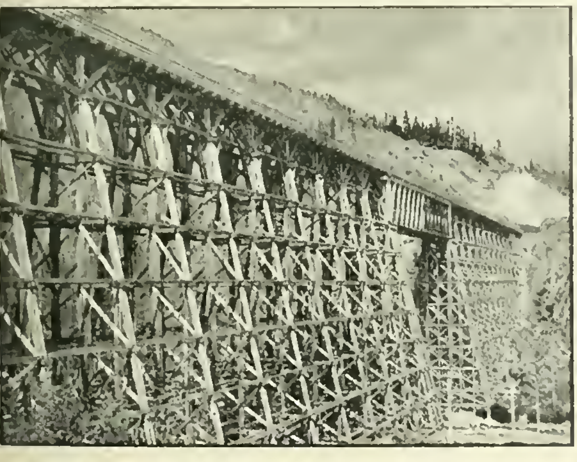
Area and Population.

PROVINCES.	Area in sq. miles.	Population (1901).	CAPITAL.	Population (1901).
Ontario	260,000	2,182,947	Toronto	208,041
Quebec	351,000	1,648,898	Quebec	68,840
Brit. Columbia	372,000	178,657	Victoria	20,816
New Brunswick	28,000	331,120	Fredericton	7,117
Nova Scotia	21,000	459,574	Halifax	40,832
Manitoba	74,000	255,211	Winnipeg	42,340
P. E. Island	2,000	103,259	Charlottetown	12,080
Saskatchewan	250,000	250,000	Regina	2,645
Alberta	253,000	250,000	Edmonton	2,626
Territories	2,129,811	52,709	......	....

Yukon Territory, 196,100 sq. miles; North-West Territory, 1,933,711.

Analytical Review of Canada.

How long is it since Canada was discovered? Who inhabited Canada when it was discovered? How many Indians are now in Canada?



Mountain Creek Bridge, C.P.R., 1,500,000 ft. of Timber (as originally built).

"Kicking Horse" Canyon, C.P.R.

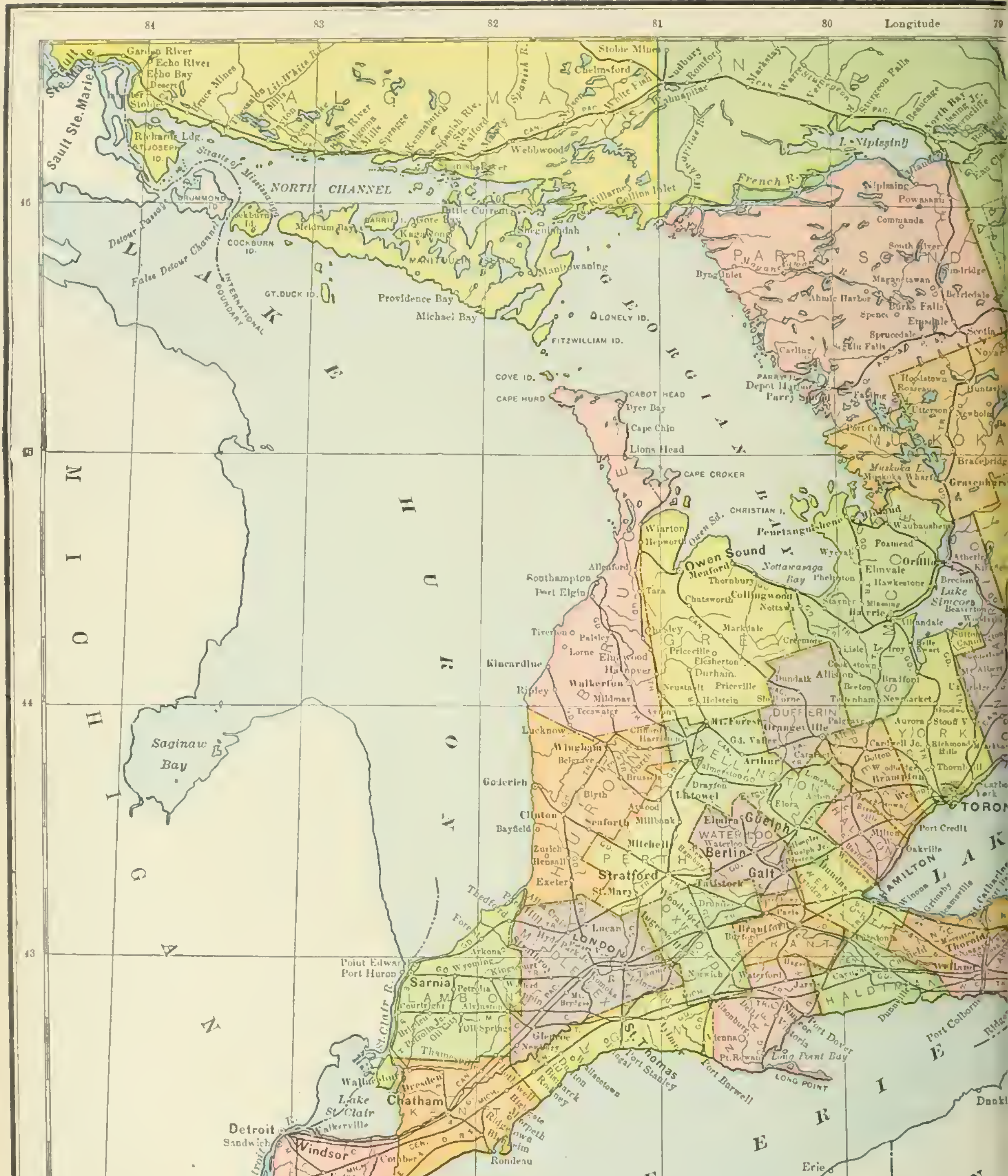
Compare the area of Canada and Europe; Canada and the United States. What European countries are smaller than Nova Scotia?

Draw a map of Canada with lines indicating the belts of temperature in Canada. (*Pages 23 and 24.*) Why is the heat line so far north on the west coast? How does Canada compare with England in sunshiny days?

Who is at the head of the Government of Canada? What is meant by the Cabinet? Name the four factors in the Government of Canada. Who appoints the Governor-General? How is the Cabinet chosen? How is the Senate appointed? How are members of the House of Commons chosen? How does Canada rank compared with the rest of the world in number of her commercial vessels? What are the principal industries of Canada? Where is wheat chiefly grown in Canada? What other important departments of agriculture does Canada excel in? Which are the leading fruit-growing provinces? What is the chief fruit exported? What country uses most of the Canadian fruit exported?

What are the leading kinds of wood produced in Canada? What is the largest Canadian tree? In what province does it grow? Describe the chief forest regions of Canada. What countries receive most Canadian lumber? What are the chief uses to which Canadian woods are applied?

Name the leading minerals found in Canada. In what provinces is coal found in paying quantities? In which provinces are the largest coal mines? Which province produces most gold?


84
83
82
81
80
Longitude
79
46
44
43
42
A L G O M A
Sault Ste. Marie
Sault
Garden River
Echo River
Echo Bay
Desert
Bruce Mines
Thessalon
Lit. White R.
Dean Lake
Blind River
Algoma Mills
Spragge
Kennabutch
Spanish Riv. Sta.
Walford
Massey
Webbwood
Spanish R.
Chelmsford
Stobie Mine
Sudbury
Romford
White Fish
Wahnapitae
Markstay
Warren
Sturgeon
Sturgeon Falls
Beaucage
North Bay
Nipissing Jc.
Callander
L. Nipissing
French R.
Nipissing
Powassan
Commanda
South River
Magnetawan
Sundridge
Burks Falls
Ahmic Harbor
Spence
Emsdale
Sprucedale
Scotia
Katrine
Byng Inlet
P A R R Y   S O U N D
Magnetawan R.
Carling
Parry Sound
Depot Harbor
Falding
Hoodstown
Rosseau
Utterson
Port Carling
Huntsville
M U S K O K A
Muskoka L.
Muskoka Wharf
Bracebridge
Gravenhurst
Richards Ldg.
ST. JOSEPH ID.
Straits of Mississaga
DRUMMOND ID.
Detour Passage
False Detour Channel
NORTH CHANNEL
Cockburn Id.
COCKBURN ID.
BARRIE I.
Meldrum Bay
Gore Bay
Kagawong
Little Current
Sheguiandah
Killarney
Collins Inlet
MANITOULIN ISLAND
Manitowaning
Providence Bay
Michael Bay
GT. DUCK ID.
LONELY ID.
FITZWILLIAM ID.
COVE ID.
CAPE HURD
CABOT HEAD
Dyer Bay
Cape Chin
Lions Head
CAPE CROKER
CHRISTIAN I.
G E O R G I A N   B A Y
INTERNATIONAL BOUNDARY
L A K E   H U R O N
M I C H I G A N
Saginaw Bay
Wiarton
Hepworth
Owen Sd.
Owen Sound
Meaford
Thornbury
Nottawasaga Bay
Collingwood
Nottawa
Penetanguishene
Midland
Waubaushene
Wyevale
Foxmead
Orillia
Elmvale
Hawkestone
Phelpston
Stayner
Minesing
Barrie
Lake Simcoe
Brechin
Beaverton
Allandale
Cookstown
Alliston
Lisle
Lefroy
Belle Ewart
Beeton
Bradford
Tottenham
Newmarket
Aurora
Stouffville
Richmond Hill
Thornhill
Cardwell Jc.
Bolton
Woodbridge
Brampton
Weston
TORONTO
Allenford
Southampton
Port Elgin
Tara
Chatsworth
Chesley
Paisley
Tiverton
Lorne
Elmwood
Hanover
Kincardine
Walkerton
Ripley
Mildmay
Teeswater
Lucknow
Markdale
Priceville
Flesherton
Durham
Ceylon
Dundalk
Neustadt
Holstein
Shelburne
G R E Y
B R U C E
DUFFERIN
Mt. Forest
Orangeville
Palgrave
Clifford
Harriston
Gd. Valley
Arthur
Cataract
Wingham
Belgrave
Brussels
Palmerston
Drayton
Listowel
Elora
Fergus
W E L L I N G T O N
Goderich
Blyth
Atwood
Clinton
Seaforth
Milbank
Bayfield
Zurich
Hensall
Exeter
H U R O N
Mitchell
P E R T H
Stratford
St. Marys
Elmira
Guelph
WATERLOO
Waterloo
Berlin
Preston
Galt
Tavistock
Hespeler
Guelph Jc.
Dundas
Waterdown
Milton
Oakville
Port Credit
HAMILTON
Winona
Grimsby
Beamsville
St. Catharines
Thorold
Welland
Port Colborne
Dunnville
Caledonia
Cayuga
Jarvis
Hagersville
Brantford
Paris
Burford
Drumbo
Woodstock
Ingersoll
Norwich
Waterford
Simcoe
Delhi
Tillsonburg
Vienna
Pt. Rowan
Long Point Bay
LONG POINT
Port Dover
Port Burwell
Port Stanley
St. Thomas
Aylmer
Lucan
LONDON
Hyde Park
Komoka
Mt. Brydges
Glencoe
Newbury
Dutton
Wallacetown
Fingal
Rodney
Ridgetown
Morpeth
Highgate
Blenheim
Rondeau
Thedford
Forest
Arkona
Parkhill
Ailsa Craig
Point Edward
Port Huron
Sarnia
Wyoming
Petrolia
LAMBTON
Courtright
Alvinston
Oil Springs
Wallaceburg
Dresden
Chatham
K E N T
Thames R.
St. Clair R.
Lake St. Clair
Walkerville
Detroit
Sandwich
Windsor
Essex
Kingsville
Cottam
ESSEX
Amherstburg
Detroit R.
Leamington
Wheatley
Sea Cliff Park
PT. PELEE
PT. PELEE ID.
INTERNATIONAL BOUNDARY
L A K E   E R I E
Erie
OHIO
P E N N S Y
Dunkirk
H A L D I M A N D
B R A N T
O X F O R D
M I D D L E S E X
E L G I N
N O R F O L K
Y O R K
S I M C O E
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C A N. P A C.
G D. T R.
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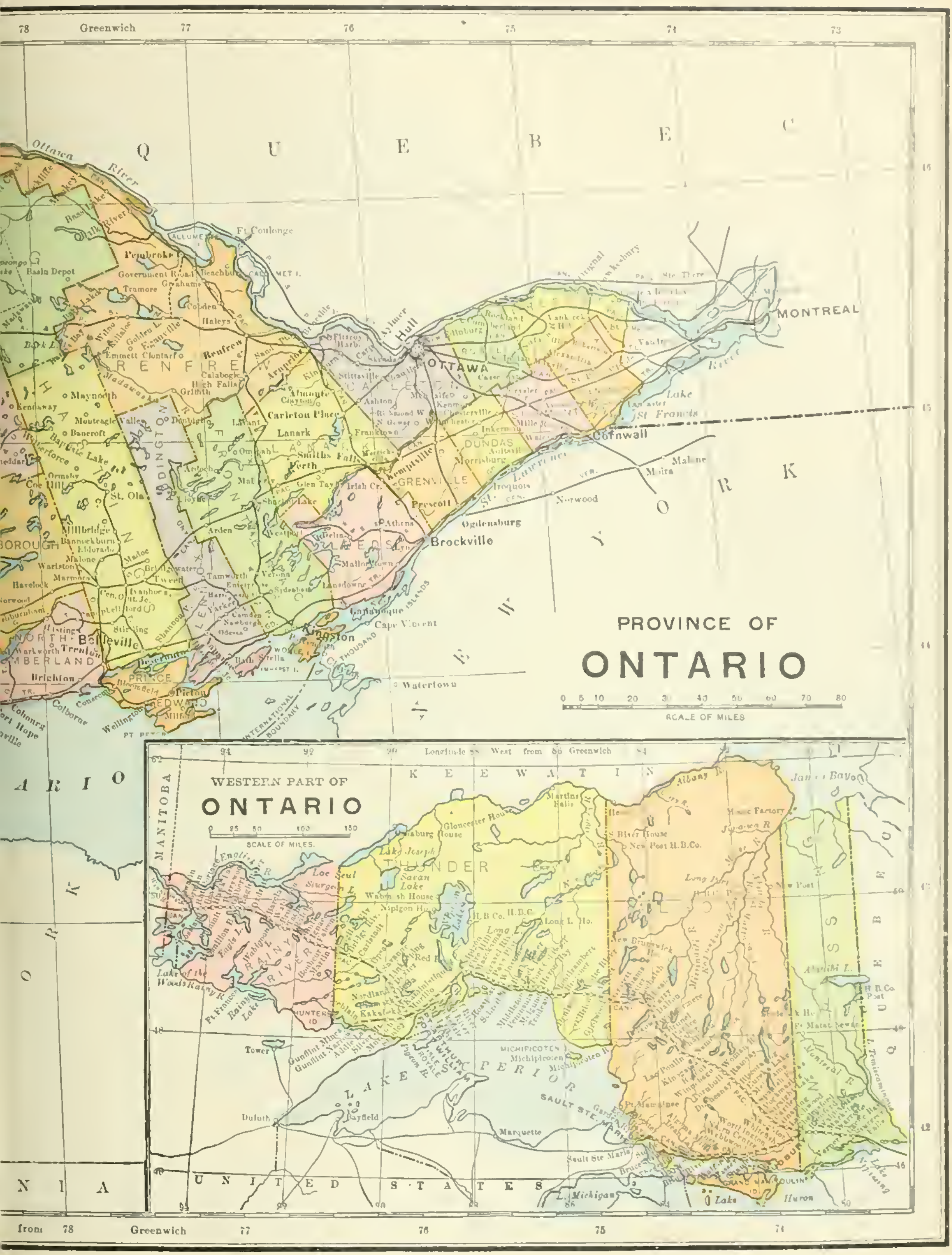


PROVINCE OF ONTARIO

WESTERN PART OF ONTARIO

ONTARIO.

Map Studies.

Name the boundary lakes and rivers of Ontario. Of the rivers, which two are the largest? Where do they rise? Where do they empty? Name the Great Lakes. Which is the largest? Describe an all-water route from Lake Superior to Montreal. Describe two all-water routes from Kingston to Ottawa.

How is Lake Erie connected with Lake Ontario? Is Niagara river suitable for navigation? Why? How is the difficulty overcome?

What is the largest island in lake Huron? Name three others in this lake. Name two islands in Lake Superior.

What islands in the Ottawa river belong to Quebec? With what lakes is Georgian Bay connected? Is it salt or fresh water Name five of the largest inland lakes of Ontario.

What are the two leading railways in Ontario? What railways run into the following places? (Take each place separately.) Toronto, Hamilton, Ottawa, London, Kingston, Guelph, Belleville, Peterboro', St. Catharines, Brantford, St. Thomas, Stratford, Chatham, Sarnia. Name the chief rivers of Ontario that flow into Georgian Bay; Lake Huron; Lake Erie; Lake Ontario; the Ottawa River.

Draw a map of Ontario with the leading rivers, and

Toronto.

Osgoode Hall.

Parliament Buildings, Toronto.

Niagara Falls.

k the highest parts of the province after studying ratersheds.

hat counties are drained by the Severn? The Mait- ? The Thames? The Grand? The Trent?

what latitude is the most southern part of Ontario?

hat is the longitude of the most easterly part of rio? Of the most westerly?

ame the counties, with their county towns, border- on Lake Ontario; on Georgian Bay; on Lake Erie; he Ottawa River; on Lake Huron; on the St. Law- e River; on the Bay of Quinte; on Lake Simcoe: e interior of Ontario.

here is Manitoulin Island?

hat waters are connected by the Rideau canal? he Welland canal? What cities or towns at the of these canals?

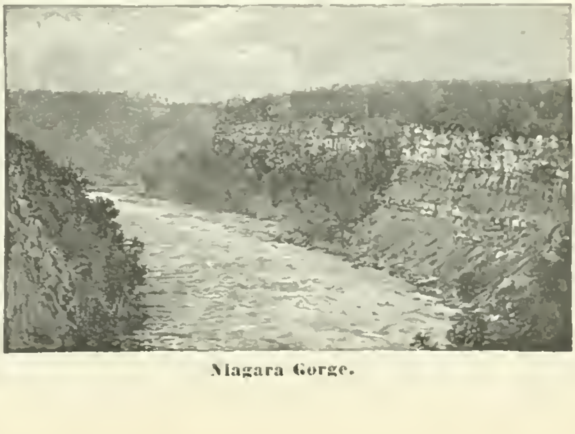
hysical Features.—The northern and north- ern part of Ontario is hilly and rocky, with many s, formed by the ice-flow during the glacial period. southern portion, near the great lakes, is chiefly and very fertile.

Climate.—The climate of Ontario varies greatly in the different localities. Along the shore of Lake Erie and in the Niagara district, on account of the modifying influence of the Great Lakes, neither the heat of summer nor the cold of winter is excessive. Here peaches, grapes, and many other varieties of fruit grow in abundance. In the central district greater extremes in temperature are observed; while in the northern sections of the province, though the summers are warm and bright, the winter seasons are long and severe. Everywhere, however, the climate is healthy and invigorating.

Government.—The government of Ontario consists of a Lieutenant-Governor appointed by the Dominion Government, an Executive Council, and a Legislative Assembly elected by the people.

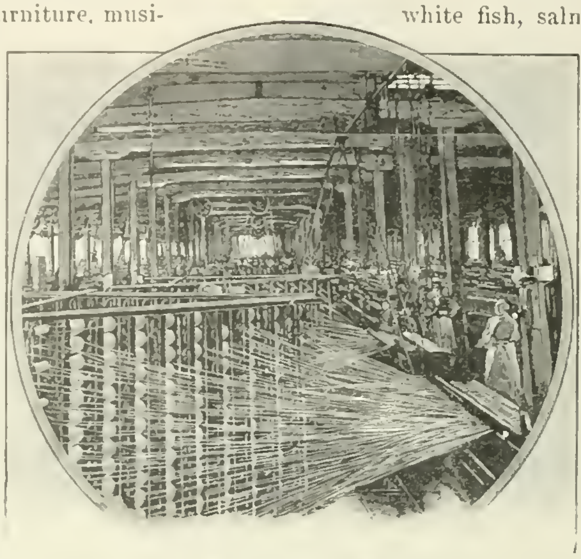
Agriculture.—Of the various industries carried on in the Province of Ontario, agriculture is the most important. The soil, the climate, and the splendid means of transportation both by rail and water largely account for this. Wheat, barley, oats, peas, hay and potatoes are grown in large quantities. Stock-raising and dairy-farming are leading departments of agricultural work. Fruits of many varieties are produced in abundance, especially in the Erie and Niagara districts

Lumbering.—The lumber industry is very important. Ontario has millions of acres of unsurpassed timber lands. These lands are, for the most part, confined to the northern districts, and are among the most valuable resources of the province. White pine and spruce are the trees of greatest value.

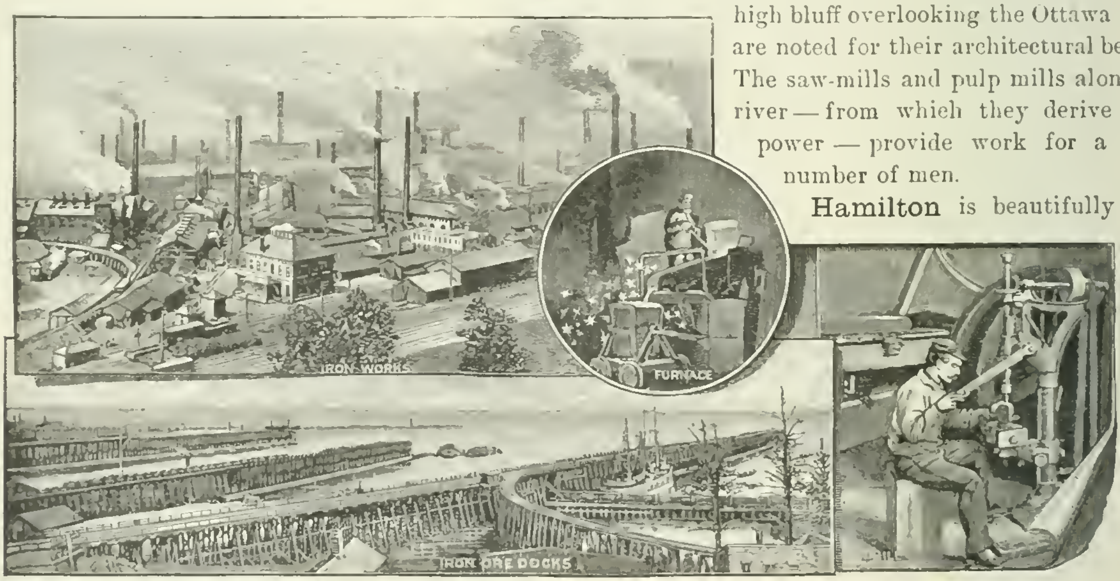


Niagara Gorge.

Manufactures.—Among the important products of Ontario's factories are machinery of all kinds, cotton and woollen goods, furniture, musical instruments, boots and shoes, tobacco, wood-pulp, and paper. Much of this output is consumed in Canada, but there are very important exports of manufactured products to other countries. Agricultural machinery, musical instruments, and furniture are sent to Europe, South America, South Africa, and Australia.


Interior of Cotton Mill.

Mining.—The mineral areas of Ontario are widely scattered throughout the province. Gold is found in considerable quantities near the Lake of the Woods and in the Rainy river district, and to a lesser extent in Hastings county and other places. Copper and nickel are found in abundance near Sudbury; valuable iron ores to the north of Lake Huron, and in Victoria, Hastings, and Lanark counties; salt and petroleum in the western peninsula; and natural gas in the Lake Erie region.



Fishing.—Though Ontario is an inland province, she has a great fishing industry. Her fresh-water fisheries are the greatest of their kind in the world, and give annual employment to over three thousand men. The most important fish in her waters are white fish, salmon trout, bass, pickerel, and sturgeon.

Cities in Ontario.

Toronto is the capital of the Province, and is the second city in size in the Dominion. It has a good harbor, behind the shelter of a low island. It possesses fine parks and many handsome public buildings. The manufactured products of Toronto are of a most varied character. Agricultural implements, engines, mill machinery of all kinds, bicycles, furniture, musical instruments, and carpets are the leading manufactures.

Ottawa is the second largest of the cities of Ontario, and the seat of the Dominion Government. The Parliament buildings, superbly situated on a high bluff overlooking the Ottawa river, are noted for their architectural beauty. The saw-mills and pulp mills along the river—from which they derive their power—provide work for a great number of men.

Hamilton is beautifully situated on a bay at the head of Lake Ontario. It is the third city in the Province. It is a progressive city, and has manufactures of considerable value, among which machinery, farm implements, stoves, boots and shoes, cotton and woollen goods, and pig iron are the most important.

Ottawa.

Rideau Falls.

London is the chief city of the western peninsula of the Province. It is surrounded by a splendid farming district from which it derives much of its importance. It is in the centre of a very large district, and does a wholesale trade with the surrounding towns. It manufactures agricultural implements, machinery, boots and shoes, furniture, and railway cars and engines, and has large oil refineries.

Kingston is the oldest city in the province, and was originally a fortified post established as a defence against the Iroquois. It ranks next to Quebec and Halifax for military strength, and is the seat of Queen's University and the Royal Military College. The chief manufactures are railway locomotives and cars.

Brantford is an important railway centre. Its manufactures consist chiefly of agricultural implements, machinery, and cloth, both woollen and cotton.

Stratford is a railway centre, and is in the best dairy district of Ontario. It manufactures agricultural implements and furniture.

Windsor is an important railway terminus, and is the centre of a fertile district, noted for its fruit.

St Thomas is a busy railway centre. The Michigan Central railway has large shops here.

Guelph is in the heart of a fine agricultural district. Besides doing a large trade in farm produce, it is also noted as a cattle market. Pianos and organs, engines, and agricultural implements are some of the most important manufactured products.

Belleville is a charming city, and manufactures large quantities of lumber and agricultural implements. It is a distributing centre for the large farming and mining country north of it.

St. Catharines is near the entrance to the Welland canal from Lake Ontario. It has large nurseries, flour mills, and paper mills. It manufactures edge tools, and is surrounded by a fine fruit district.

Chatham is both a railway and shipping centre. It manufactures engines and agricultural implements.

Niagara Falls has become a great centre for developing electrical power.

Peterborough, the youngest city, has extensive electrical works and mills for the manufacture of cereal food.

Home Exercises—Make a list of the cities of Ontario, with the rivers or other waters on which they are situated, and the railroads that run through or into them.

Examine the locations of the cities of Ontario on the map and write the reasons you can give to prove that they are situated where large cities should be found.

C. P. R. Grain Elevators at Fort William.

Cities of Ontario.

Population, 1901.

Toronto	208,041
Ottawa	59,928
Hamilton	52,634
London	37,983
Kingston	17,963
Brantford	16,618
Windsor	12,153
Guelph	11,496
St. Thomas	11,485
Peterborough	11,239
Stratford	9,959
St. Catharines	9,946
Belleville	9,117
Chatham	9,068
Niagara Falls	4,244

Normal College, Hamilton.

Chief Towns of Ontario.

Population, 1901.

Berlin	9,747
Brockville	8,940
Woodstock	8,833
Owen Sound	8,776
Sarnia	8,176
Galt	7,866
Sault Ste. Marie.	7,169
Liodsay	7,003
Cornwall	6,704
Toronto Junct'n.	6,091
Barrie	5,949
Collingwood	5,755
Kenora	5,202
Pembroke	5,156
Smith's Falls	5,155
Orillia	4,907
Ingersoll	4,573
Oshawa	4,394
Cobourg	4,239
Trenton	4,217
Port Hope	4,188
Goderich	4,158
Hawkesbury	4,150
Arnprior	4,152
Petrolea	4,139
Carleton Place	4,059
Picton	3,698
Fort William	3,633
Perth	3,588
Waterloo	3,537
Gananoque	3,526
St. Mary's	3,384
Paris	3,229
Port Arthur	3,214
Midland	3,174
Dundas	3,173
Renfrew	3,153
Napanee	3,143
Almoote	3,023
Prescott	3,019
Walkerton	2,971
Strathroy	2,933
Parry Sound	2,884
Wallaceburg	2,763
Brampton	2,748
Bowmanville	2,731
Listowel	2,693
Simcoe	2,627
Clinton	2,547
North Bay	2,531
Orangeville	2,511
Leamington	2,451
Penetanguishene	2,422
Seaforth	2,247
Whitby	2,110
Kincardine	2,077

Locato the above towns that are not county towns.
Note.—There are in Ontario 15 cities, and 98 towns.

The St. Clair Tunnel.

Ports of Ontario.

Lake Superior:—Michipicoton, Nipigon, Fort William, Port Arthur.

Georgian Bay:—Parry Sound, Maganetawan, Midland, Penetanguishene, Collingwood, Meaford, Owen Sound, Wiarton (Colpoy Bay).

Lake Huron:—Sarnia, Bayfield, Goderich, Kincardine, Elgin, Southampton, Bruce Mines, Little Current, Manitowaning.

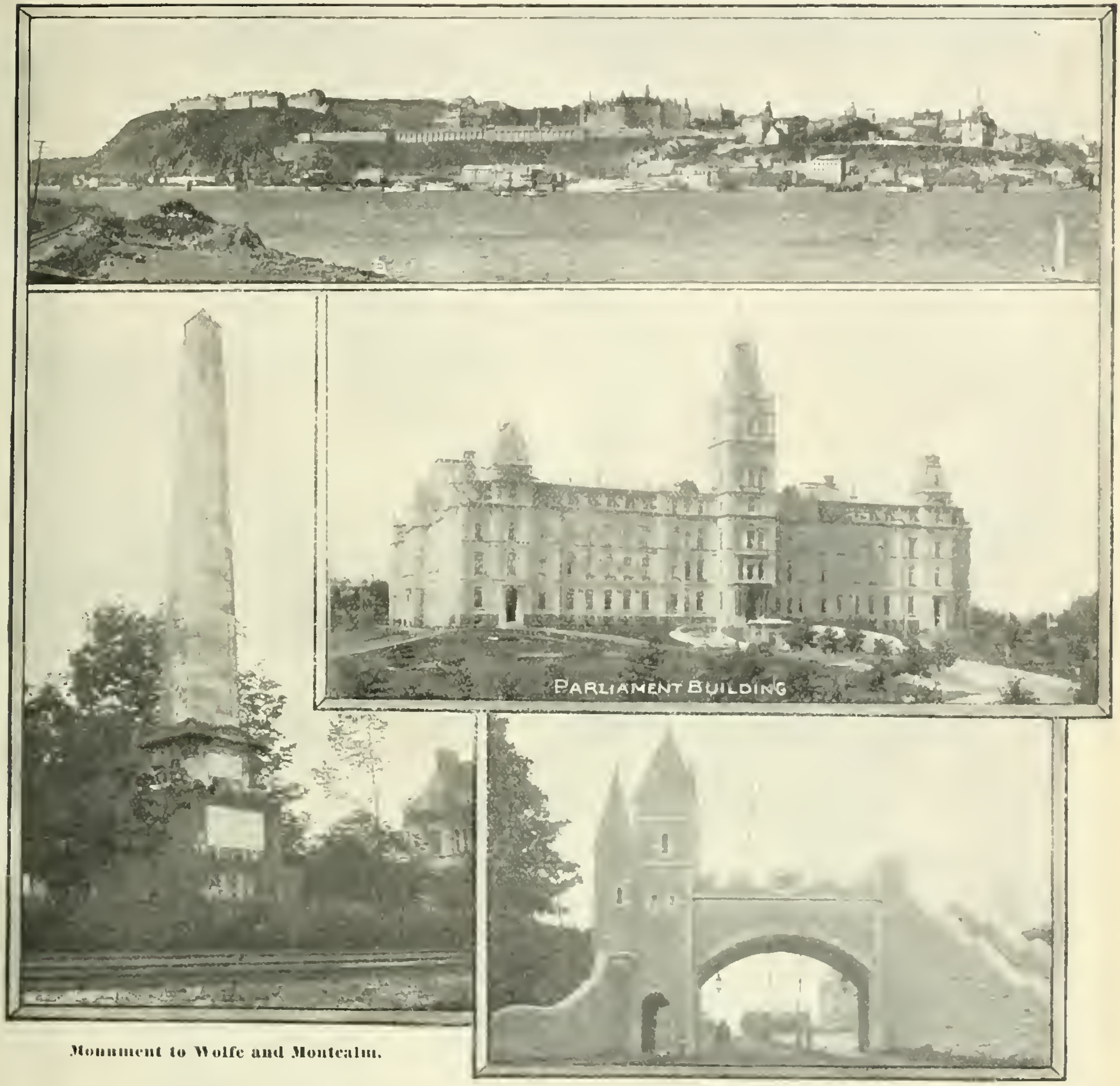
Lake Erie:—Rondeau, Stanley, Burwell, Ryerse, Rowan, Dover, Maitland, Port Colborne.

Lake Ontario and Bay of Quinte:—Niagara, Dalhousie, Hamilton, Oakville, Credit, Toronto, Liverpool, Whitby, Oshawa, Bowmanville (Darlington), Port Hope, Presqu'Isle (Brighton), Trenton, Belleville, Deseronto (Mill Point), Napanee, Picton, Kingston.

St. Lawrence:—Gananoque, Brockville, Prescott, Dickinson's Landing, Cornwall.

Kingston.

QUEBEC.



Monument to Wolfe and Montcalm.

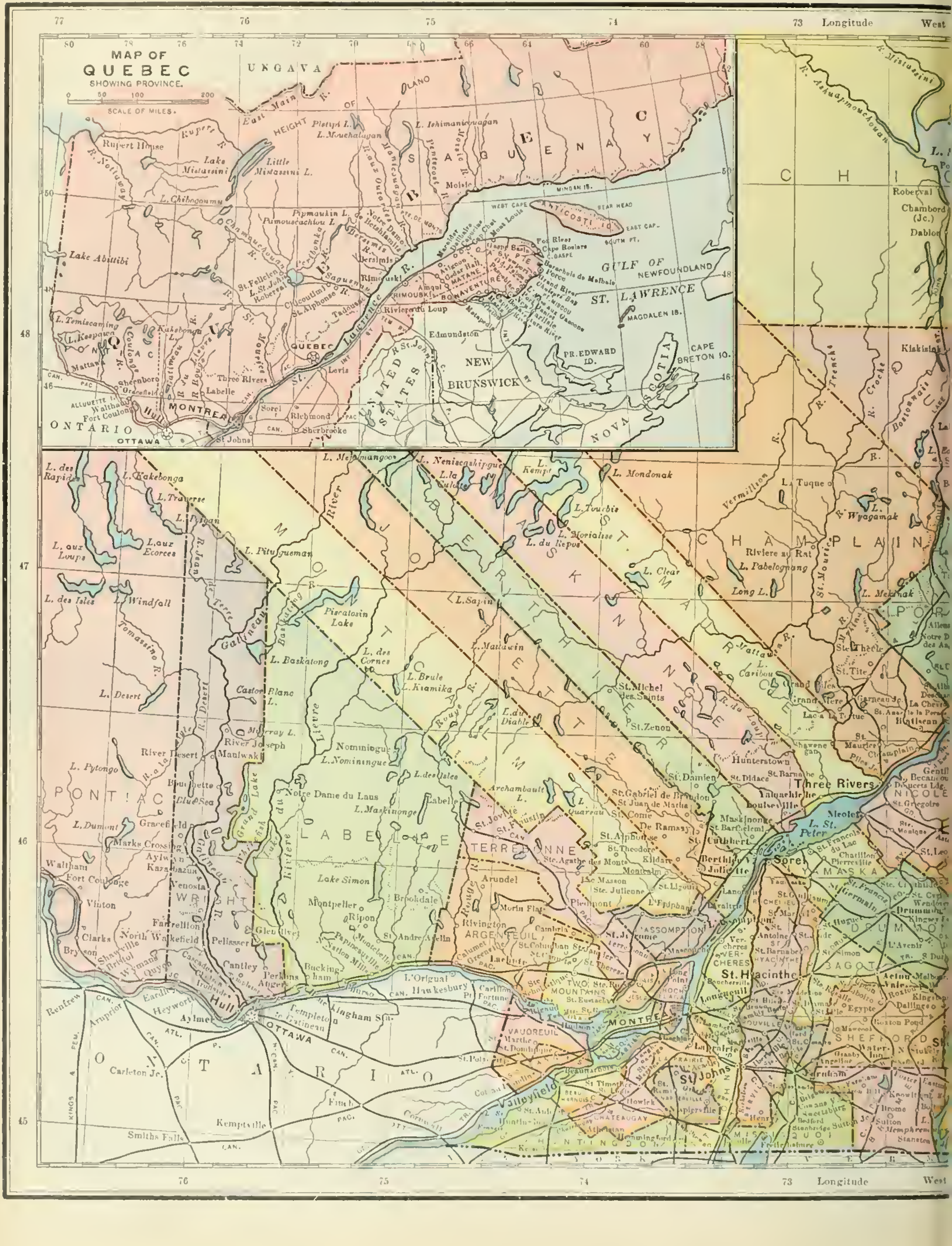
St. Louis Gate.

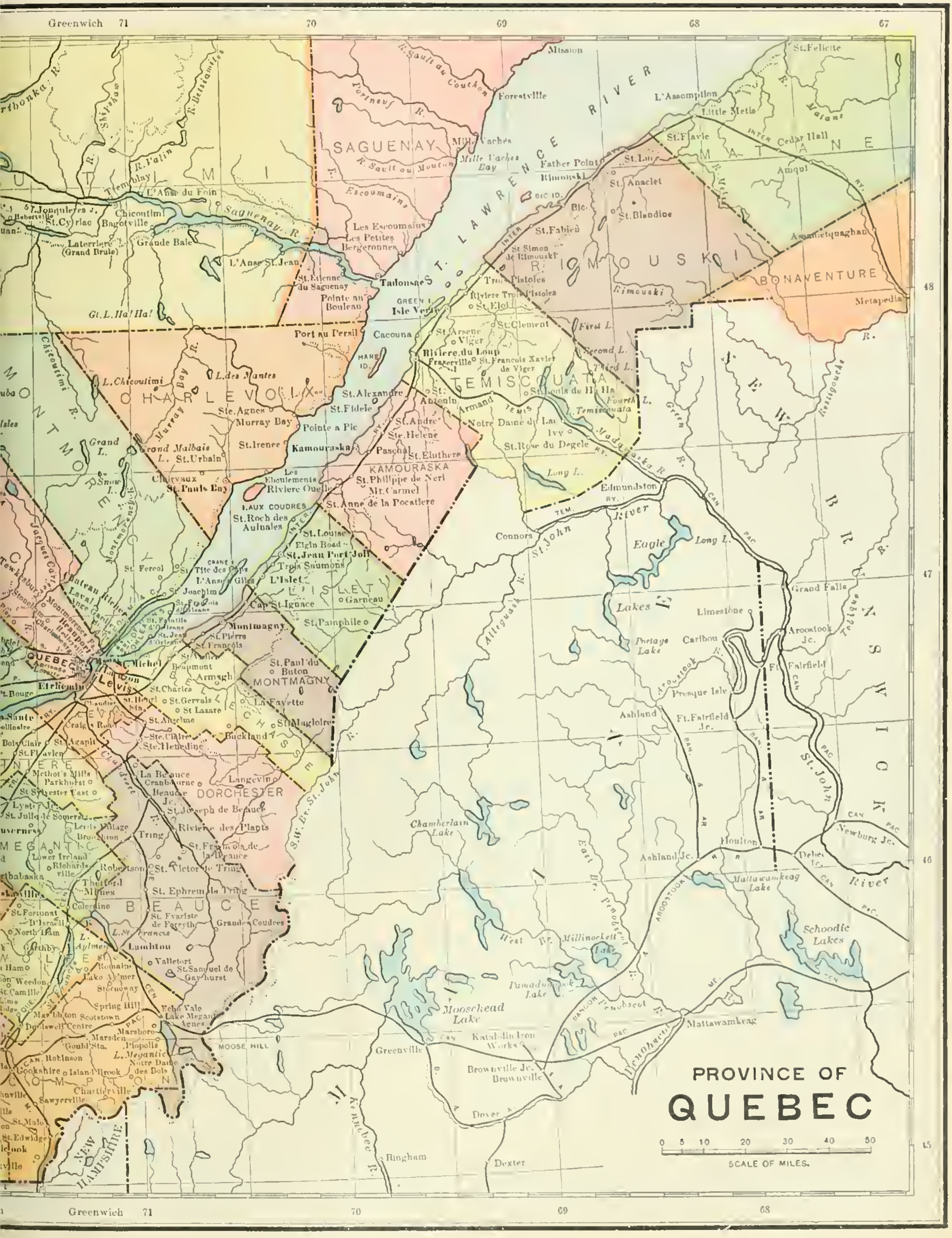
Map Studies.

What rivers form the northern boundary of Quebec? What is the western boundary? The eastern boundary? The southern? *See pages 72 and 73.*

What river separates Quebec into two divisions? Where does it rise? Into what gulf does it empty? Name six tributaries flowing into it from the north and four from the south. What is the largest island in this river? What island is at its mouth?

What large lake is there north of the St. Lawrence River? How is it drained? Name three lake expan-


MAP OF
QUEBEC
SHOWING PROVINCE.
SCALE OF MILES.
0 50 100 200
UNGAVA
HEIGHT OF LAND
SAGUENAY
CHICOUTIMI
GULF OF ST. LAWRENCE
NEWFOUNDLAND
ANTICOSTI ID.
MAGDALEN IS.
PR. EDWARD ID.
CAPE BRETON ID.
NEW BRUNSWICK
NOVA SCOTIA
UNITED STATES
ONTARIO
OTTAWA
MONTREAL
QUEBEC
Three Rivers
Sherbrooke
Rimouski
Lake Mistassini
Lake Abittibi
L. Temiscaming
77
76
75
74
73
Longitude West
48
47
46
45
PONTIAC
WRIGHT
LABELLE
OTTAWA
MONTCALM
JOLIETTE
BERTHIER
MASKINONGE
ST. MAURICE
CHAMPLAIN
TERREBONNE
ARGENTEUIL
TWO MOUNTAINS
VAUDREUIL
L'ASSOMPTION
VERCHERES
ST. HYACINTHE
YAMASKA
NICOLET
DRUMMOND
BAGOT
SHEFFORD
MISSISQUOI
CHATEAUGAY
HUNTINGDON
O N T A R I O
Hull
Aylmer
Sorel
St. Johns
Valleyfield
L. St. Peter
Three Rivers
Gatineau R.
Lievre R.
Rouge R.
St. Maurice R.
L. Tuque
L. Mondonak
L. Kempt
L. Baskatong
Piscatosin Lake
L. Desert
L. Dumont
Grand Lake
Lake Simon
Nominingue
Notre Dame du Laus
St. Michel des Saints
Labelle
Buckingham
Papineauville
Montebello
Rigaud
Vaudreuil
Beauharnois
St. Timothee
Huntingdon
Farnham
Granby
Knowlton
Sutton
Bedford
Waterloo
Acton
Roxton
St. Jerome
Joliette
Berthier
Maskinonge
Yamachiche
Louiseville
Grand Piles
St. Tite
Batiscan
Becancour
Carleton Jc.
Smiths Falls
Kemptville
Finch
Renfrew
Arnprior
Fort Coulonge
Shawville
Bristol
Wakefield
Maniwaki
Gracefield
L'Orignal
Hawkesbury
Vankleek Hill
Roberval
Chambord (Jc.)
Dablon
R. Mistassini
R. Ashuapmouchouan
NEW YORK
VERMONT



PROVINCE OF QUEBEC

sions of the St. Lawrence. Name three lakes south of the St. Lawrence. How are they drained?

What mountain range traverses the northern section of Quebec? In what direction does it run? How does it compare in extent and average height with the Rocky Mountain Highland of British Columbia? *See page 55.*

Give the exact location of Quebec, Three Rivers, and Montreal. What other cities are there in Quebec? Where are they situated?

Montreal Docks.

Maisonneuve's Monument.

What provinces of Canada border on Quebec? What gulf washes its coast?

What counties of Quebec lie south of the Ottawa River? What counties border on New Brunswick? What counties border on the St. Lawrence on its north side? On its south side? On the north side of the Ottawa?

What difference do you find between the counties north of the St. Lawrence and those south of it in regard to size? Why is there a great difference in size?

Trace the Grand Trunk, Intercolonial, and Canadian Pacific railways in Quebec. What railways run into Quebec City? Name those that run into Montreal.

What is the most easterly county in Quebec?

Which of the United States lie immediately to the south of Quebec? *See page 121.*

What bay lies between Quebec and New Brunswick? What large river flows into this bay at its head-waters?

Physical Features.—Between the St. Lawrence and the range of the Laurentides, in the north, the surface is level and fairly fertile. Beyond the Laurentides are many unsettled tracts of undulating lands. These are all well watered. There are also several extensive plateaus to the east of the Saguenay, extending as far as Labrador. In the south-west the surface is for the most part level and comprises many fine farming tracts. In the east and south-east the country is rugged and hilly. The Notre Dame Mountains in the Gaspé Peninsula form the eastern end of the Appalachian range.

Government.—The Legislature of Quebec consists of the Lieutenant-Governor of the Province, who is appointed by the Dominion Government; a Legislative Assembly chosen by popular election; and a Legislative Council chosen by the Lieutenant-Governor-in-Council, that is, by the Provincial Government. Quebec and Nova Scotia are the only provinces that have two chambers in the legislature, an Assembly and a Legislative Council.

Industries and Manufactures.

Agriculture.—Much the greater portion of the population of Quebec is engaged in agriculture, or in pursuits directly resulting from it. Oats and hay are the two most valuable crops, followed in order by potatoes, peas and beans, wheat, barley and buckwheat. Stock-raising and the production of butter and cheese are of increasing importance. Beet-raising is carried on in some parts for the manufacture of sugar. Large quantities of apples are raised, and nearly every farm has its own maple grove, for sugaring in springtime.

Lumbering.—The timber trade stands next to agriculture, and furnishes a large part of the exports of the province. White and red pine, spruce, larch, cedar, birch and maple are the most important woods. The regions of the St. Maurice, and the tributaries of the Ottawa are the chief lumbering centres. The export of pulpwood is largely increasing every year.

Fishing is carried on to a considerable extent along the shores of the Gulf of St. Lawrence. There are famous fishing establishments on the Gaspé coast. Cod, salmon, mackerel, herring, halibut, and lobsters, are the chief varieties of fish that are caught. The river and inland fisheries are among the finest in the world.

Minerals.—Quebec is at a serious disadvantage in having no coal fields. Of the minerals obtained the chief are asbestos, an incombustible fibrous substance used in making lampwicks and fire-proof fabrics of various kinds; apatite or phosphate of lime, used as a fertilizer; and copper. Gold and silver are found in limited quantities. Slate, building stone, and marble of various kinds, are becoming important products. Thetford is the centre of the asbestos mining. Iron is manufactured in considerable quantities at Radnor and Drummondville.

McGill College, Montreal.

Manufactures.—The manufacturing industries of Quebec are steadily increasing in importance, water-power being much used in the absence of cheap coal for steam purposes. The chief branches of manufacture engaged in are tanning leather, boot and shoe making, sugar refining, manufactures of iron, furs, hats, cottons, woollens and india rubber. Most of the products are for the Canadian market.

Cities and Chief Towns.

Quebec, a strongly fortified city, is the capital of the province. It stands on the lake-like expansion of the St. Lawrence at the confluence of the St. Charles with that river. It consists of a *lower town,* where the more important trading houses and factories are to be found; and an *upper town,* built on the plateau above. In population the city is the second in the province. Besides having important commercial interests as a shipping port, it is the leading centre of the Canadian boot and shoe trade. The attractive scenery in its vicinity and its historic associations make it a favorite resort for tourists.

Montreal has a splendid location on an island of the same name, situated in the St. Lawrence river, where the Ottawa flows into it. It is the largest city in the Dominion. In wealth and commercial importance, as well as in size, it takes first rank among Canadian cities. The manufactures of Montreal are varied and extensive. Hardware, boots and shoes, clothing, cottons, woollens, fur goods and sugar are the most important. It is here also that the principal car shops of both the Canadian Pacific and Grand Trunk railways are located. In the early days of Canada's history

Interior of Notre Dame Cathedral, Montreal.

Montreal, founded by Maisonneuve as an outpost against the Iroquois, wielded a vast influence because of its favorable position for the control of the fur trade. Its commercial supremacy is largely due to its unrivalled situation at the head of deep water navigation on Canada's great waterway. Its registered tonnage in 1904 was 97,689. The suburbs of Montreal, including **St. Henri** and **Westmount**, are becoming populous adjuncts to the city.

Hull, opposite the city of Ottawa, on the Ottawa River, is noted for its timber trade and extensive manufacture of matches, paper and woodenware.

Sherbrooke, situated on the St. Francis River, has large manufacturing industries, chiefly in the making of woollen goods and machinery.

Three Rivers, situated a little to the west of the triple mouths of the St. Maurice, has an important timber trade.

St. Hyacinthe is a busy manufacturing city south of Montreal, on the Yamaska.

POPULATION OF CITIES AND TOWNS.

Population, 1901.

Montreal	267,730	Valleyfield	11,055	Sorel	7,057	Fraserville	4,569	Buckingham	2,936
Quebec	68,840	Three Rivers	10,730	Lachine	5,561	Chicoutimi	3,826	Coaticook	2,880
Hull	13,993	St. Hyacinthe	9,210	St. Johns	4,030	Magog	3,516	Longueuil	2,835
Sherbrooke	11,765	Levis	7,783	Joliette	4,220	Farnham	3,114	Aylmer	2,291

Locate the above cities and towns.

NEW BRUNSWICK.

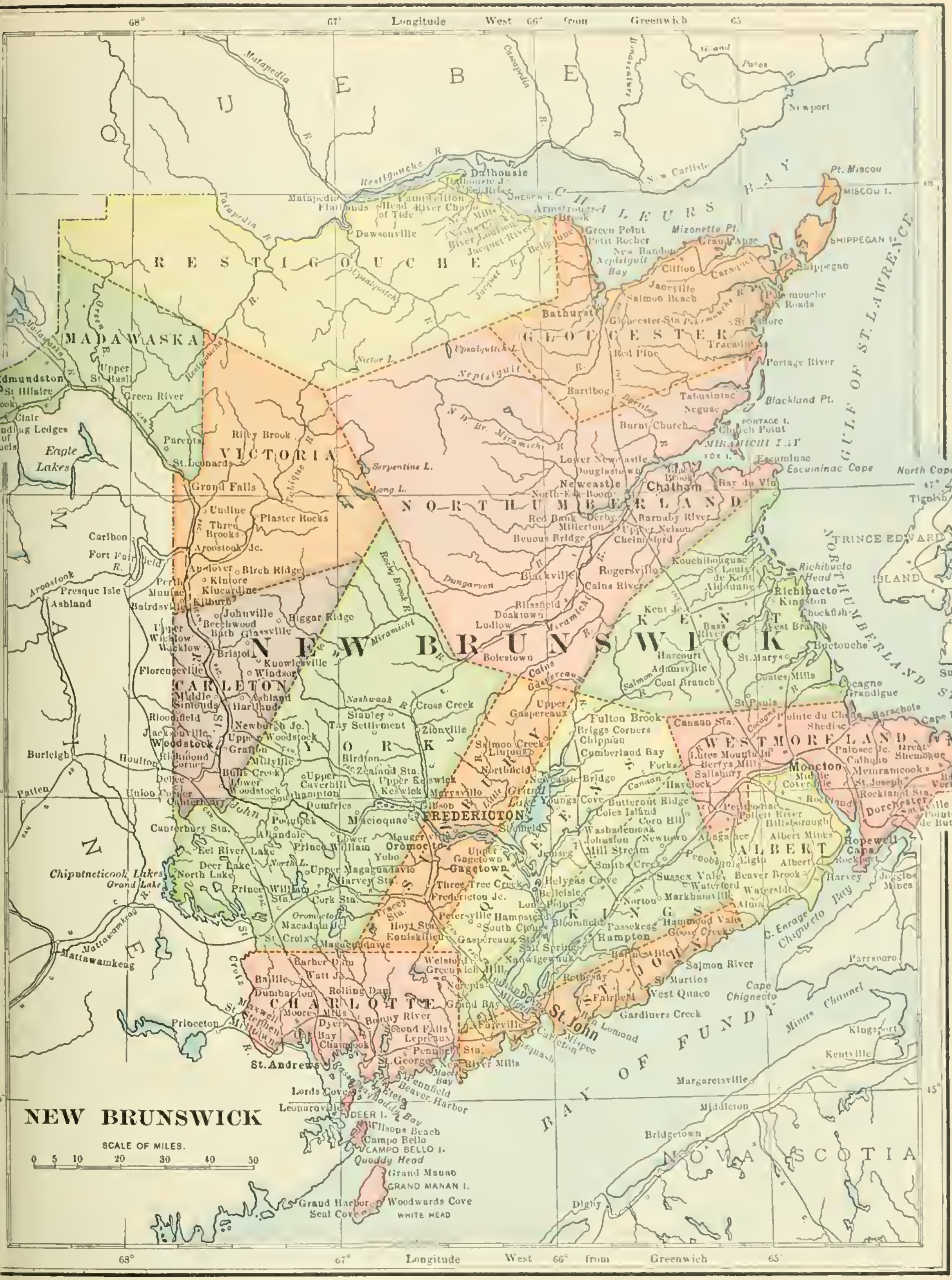
Map Studies.

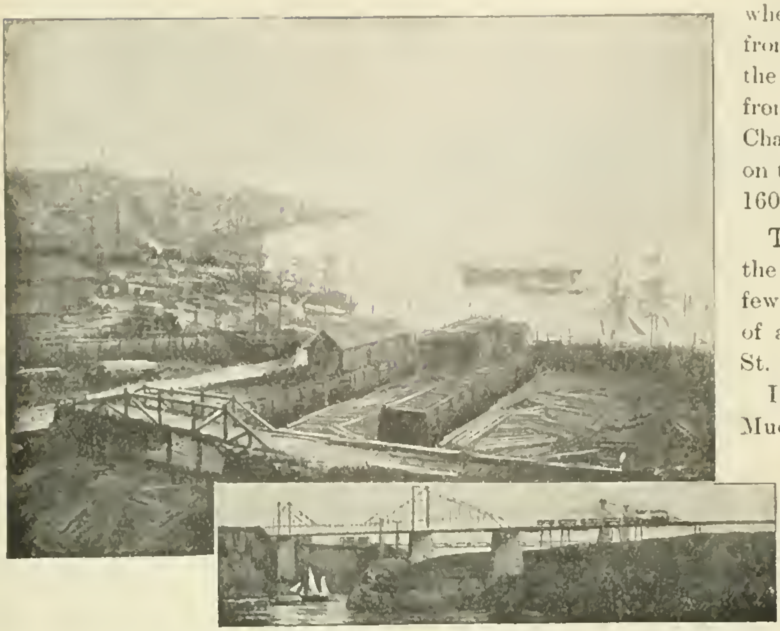
What province on the north of New Brunswick? Name the waters between this province and Quebec. What large body of water on the east? What large island on the east? Between it and New Brunswick what water? Name the province south of New Brunswick. Between these two provinces what large body of water? How is New Brunswick bounded on the west? What joins New Brunswick and Nova Scotia? Name the counties of this province that have coast line. Name those counties that have no coast line. How many counties has New Brunswick? What natural outlet during summer for the products of the inland counties? Name the chief river basin in each of the counties having coast line. Name the principal tributaries of the St. John. What is a river basin? Name and locate the capital of New Brunswick. Locate the seat of Municipal Government for each county. What is meant by Municipal Government? Name and locate three of the largest lakes of New Brunswick. Locate the important islands of New Brunswick, also the capes. Between what parallels of latitude is New Brunswick? Between what meridians of longitude? What is the area and population of New Brunswick?

City Square and Normal School, Fredericton.

Cathedral, Fredericton.

Trace the course of the Canadian Pacific railway and its branches in the province, also Intercolonial railway, the Canada Eastern railway, the Central railway, the Shore line, the New Brunswick and P.E. Island railway.


NEW BRUNSWICK
SCALE OF MILES.
0 5 10 20 30 40 50
Longitude West from Greenwich
68°
67°
66°
65°
47°
46°
45°
QUEBEC
RESTIGOUCHE
MADAWASKA
VICTORIA
GLOUCESTER
NORTHUMBERLAND
CARLETON
YORK
SUNBURY
QUEENS
KENT
WESTMORELAND
ALBERT
KINGS
ST. JOHN
CHARLOTTE
NEW BRUNSWICK
MAINE
NOVA SCOTIA
PRINCE EDWARD ISLAND
CHALEURS BAY
GULF OF ST. LAWRENCE
NORTHUMBERLAND STRAIT
BAY OF FUNDY
Chignecto Bay
Minas Channel
Restigouche R.
Matapedia R.
Cascapedia R.
Bonaventure R.
Grand Pabos R.
Newport
New Carlisle
Pt. Miscou
MISCOU I.
SHIPPEGAN I.
Shippegan
Dalhousie
Campbellton
Matapedia
Flatlands
Head of Tide
Dawsonville
Jacquet River
Belledune
Green Point
Petit Rocher
New Bandon
Nepisiguit Bay
Mizonette Pt.
Grande Anse
Caraquet
Clifton
Janeville
Salmon Beach
Bathurst
Pokemouche
Tracadie
Red Pine
Portage River
Bartibog
Tabusintac
Neguac
Burnt Church
Blackland Pt.
PORTAGE I.
Church Point
MIRAMICHI BAY
FOX I.
Escuminac
Escuminac Cape
Upsalquitch L.
Upsalquitch R.
Nepisiguit R.
Victor L.
N.W. Br. Miramichi R.
Serpentine L.
Long L.
Lower Newcastle
Douglastown
Newcastle
Chatham
Bay du Vin
North Cape
Tignish
Red Bank
Derby
Millerton
Barnaby River
Upper Nelson
Chelmsford
Renous Bridge
Blackville
Rogersville
Cains River
Dungarvon
Blissfield
Doaktown
Ludlow
Boiestown
Miramichi R.
Kouchibouguac
St. Louis de Kent
Aldouane
Richibucto
Richibucto Head
Kingston
Chockfish
West Branch
Kent Jc.
Bass River
Buctouche
St. Mary's
Harcourt
Adamsville
Coal Branch
Coates Mills
Cocagne
Grandigue
Summerside
St. Pauls
Canaan Sta.
Pointe du Chene
Shediac
Barachois
Cape Bald
Cape Tormentine
Great Shemogue
Cape Spear
Port Elgin
Bay Verte
Lutes Mountain
Berrys Mills
Salisbury
Moncton
Painsec Jc.
Memramcook
St. Joseph
Rockland Sta.
Dorchester
Sackville
Pointe de Bute
Middle Coverdale
Rockland
Petitcodiac
Pollett River
Hillsborough
Albert Mines
Hopewell Cape
Elgin
Albert
Harvey
Joggins Mines
Beaver Brook
Waterside
Alma
Waterford
Markhamville
C. Enrage
Edmundston
St. Hilaire
Clair
Upper St. Basil
Green River
Eagle Lakes
Parents
St. Leonards
Riley Brook
Grand Falls
Undine
Three Brooks
Plaster Rocks
Aroostook Jc.
Caribou
Fort Fairfield
Andover
Birch Ridge
Kintore
Kincardine
Perth
Muniac
Kilburn
Presque Isle
Ashland
Aroostook R.
Bairdsville
Johnville
Beechwood
Bath
Glassville
Biggar Ridge
Upper Wicklow
Wicklow
Bristol
Knowlesville
Windsor
Florenceville
Middle Simonds
Hartland
Bloomfield
Jacksonville
Newburgh Jc.
Woodstock
Upper Grafton
Richmond Corner
Millville
Bulls Creek
Lower Woodstock
Debec
Houlton
Burleigh
Patten
Haloo Corner
Canterbury
Southampton
Nashwaak R.
Cross Creek
Stanley
Tay Settlement
Zionville
Birdton
Zealand Sta.
Upper Caverhill
Upper Keswick
Keswick
Marysville
Dumfries
Pokiok
Canterbury Sta.
Allandale
Eel River Lake
Deer Lake
North Lake
Prince William
Mactaquac
Gibson
FREDERICTON
Lower Prince William
St. Marys
Maugerville
Yobo
Oromocto
Upper Gagetown
Gagetown
Upper Magaguadavic
Harvey Sta.
Three Tree Creek
Fredericton Jc.
Prince William Sta.
Cork Sta.
Chiputneticook Lakes
Grand Lake
Mattawamkeag
Oromocto L.
McAdam Jc.
St. Croix
Magaguadavic
Tracey Sta.
Hoyt Sta.
Petersville
Enniskillen
Hampstead
South Clones
Gaspereaux Sta.
Upper Gaspereaux
Salmon Creek
Chipman
Cumberland Bay
Fulton Brook
Briggs Corners
Forks
Newcastle Bridge
Youngs Cove
Butternut Ridge
Coles Island
Cord Hill
Washademoak
Johnston
Newtown
Mill Stream
Smiths Creek
Sussex Vale
Belyeas Cove
Belleisle
Long Point
Jemseg
Grand Lake
Bloomfield
Passekeag
Hampton
Hammond Vale
Goose Creek
Norton
Salt Springs
Nauwigewauk
Welsford
Greenwich Hill
Barber Dam
Watt Jc.
Baillie
Dumbarton
Rolling Dam
Moores Mills
Dyers
Chamcook
Bonny River
Second Falls
Lepreaux
Pennfield
St. George
New River Mills
Mace Bay
Beaver Harbor
St. Stephen
Milltown
Maxwell
Princeton
St. Andrews
Lords Cove
Leonardville
DEER I.
Wilsons Beach
Campo Bello
CAMPO BELLO I.
Quoddy Head
Grand Manan
GRAND MANAN I.
Grand Harbor
Woodwards Cove
Seal Cove
WHITE HEAD
Nerepis
Grand Bay
Fairville
Carleton
St. John
Rothesay
Musquash
Mispec
Ben Lomond
Fairfield
St. Martins
West Quaco
Gardiners Creek
Salmon River
Cape Chignecto
Parrsboro
Kingsport
Kentville
Margaretsville
Middleton
Bridgetown
Digby
Woodstock
Salmon R.
Canaan R.
St. John R.
St. Croix R.



General View of St. John, N.B.

Surface.

The surface of New Brunswick is gently undulating and covered with valuable forests. No part of its surface rises to any very great height.

In the north-western sections are several ranges of hills from 1,000 to 2,000 feet in height, being an extension of the Appalachian system. In the south-west are similar ranges.

The rivers are numerous and afford excellent inland communication. No other country possesses, within the same area, so many beautiful lakes.

Rivers.

The **St. John River** rises in Maine, flows towards the north-east, then to the south-east, and after a course of 450 miles, empties its waters into the Bay of Fundy. It is navigable for large steamers to Fredericton, and for smaller ones to Woodstock, and during high water to Grand Falls, nearly 225 miles from the sea.

The St. John receives on the left bank, St. Francis, Madawaska, Grand, Tobique, Nashwaak, Jemseg, Washademoak, Belleisle, and the Kennebecasis; on the right, the Aroostook and Oromocto.

The upper parts of the St. John Basin are heavily wooded, and vast quantities of lumber are floated down its waters. In spring part of the valley is overflowed, covering its far-reaching meadows with a rich sediment. About 225 miles from its mouth are the Grand Falls, where the waters rush down into a rocky gorg from a height of 74 feet. These falls rank wit the finest on the continent, attracting visitor from all parts. The river owes its name t Champlain and De Monts, who first visited on the day of St. John the Baptist, June 24t 1604.

The Miramichi rises in two main branche the northwest and southwest, which unite few miles above Newcastle, and after a cour of about 220 miles, empties into the Gulf St. Lawrence.

It is navigable for large vessels to Newcastl Much of the basin of the Miramichi is sti unexplored; but the lumbermen are yearl penetrating further into its valuable fo ests. It is one of the far-famed salmo rivers of New Brunswick.

The Restigouche River forms pa of the boundary between Quebec an New Brunswick. From Dalhousie t Metapedia it is noted for its beautiful scenery, an measures about four miles across. It is the most note trout and salmon stream in the world, its salmon ave aging about twenty-two pounds.

The other important river basins are the Petitcodia noted for its great tides and "Tidal Bore," and th St. Croix, forming the boundary between New Brun wick and Maine.

Islands.

The largest islands belonging to New Brunswick ar Miscou and Shippegan in Gloucester County, Gran Manan at the mouth of the Bay of Fundy, and De Island and Campo-Bello in Passamaquoddy Bay. Th last named island attracts large numbers of summ visitors, and is well provided with hotel accommodatio

Coast Waters.

The Bay of Chaleur on the north, the Gulf of S Lawrence, Northumberland Strait and Bay Verte on th east, the Bay of Fundy and Passamaquoddy Bay on th south, abound in fish of almost every kind.

Towns.

St. John, the largest city, and the commerci centre of New Brunswick, is situated at the mouth the St. John river. It has a population of abou 41,000. The city lies on both sides of the harbo Adjoining St. John, on the west, is the pretty suburb Fairville. A suspension bridge connects Fairville wit

St. John East. Just north is a fine cantilever railway bridge, and immediately beneath these bridges are the celebrated "Reversible Falls" of the St. John river.

St. John contains numerous saw-mills and factories, large pulp mills and foundries. Its chief buildings are its schools, custom house, post-office, hospital, Provincial lunatic asylum and grain elevators.

St. John has a fine harbor, open for navigation all the year round, and is the only harbor on the Atlantic coast north of Baltimore that is never obstructed by ice. This city is rapidly becoming the winter port of Canada, because through it is the shortest available route between Montreal and Liverpool.

In tonnage, St. John ranks fourth in the British empire. It is finely situated as a distributing centre, having quick rail and steamship communication with all the Maritime Provinces. St. John was nearly destroyed by fire June 20th, 1877, but quickly recovered from the disaster.

The real founders of this city were the United Empire Loyalists, who landed May 18th, 1783. The following year New Brunswick was made a separate province, and the first legislature met at St. John, then Parr Town, Jan. 3rd, 1786. St. John was incorporated May 18th, 1785, the oldest incorporated city in Canada.

Fredericton, situated on the right bank of the St. John, about eighty-four miles from its mouth, is the capital of New Brunswick. Its streets are broad, and shaded by beautiful elms. Here are the Parliament Buildings, Provincial University, Normal School, and Infantry School.

Fredericton is not only a beautiful city, but a stirring business centre of about 7,000. It possesses first-class railway and steamship communication with all parts of the Province.

This city, formerly St. Anne's Point, was founded about 1740, and received its present name about 1785, becoming the capital of the Province 1788.

Moncton, situated on the Petitcodiac, is an important railway centre, with manufuctures of iron castings, leather, cotton, woollen goods, sugar and flour. One of its most interesting features is the "Bore," or "Tidal Wave," of the Petitcodiac river, which empties into the Bay of Fundy. The difference between high and low tide at this point, is from thirty to forty feet.

Moncton is growing rapidly, having at present a population of about 10,000.

St. Stephen, one of the prettiest towns of New Brunswick, is situated at the head of navigation on the St. Croix.

It is the centre of important lumber interests and has a population of about 3,000. Joining it on the north is Milltown, with over 2,000 inhabitants.

These twin towns are important centres of candy, cotton and soap manufactures.

St. Andrews, beautifully situated on a small peninsula between the St. Croix and Passamaquoddy Bay, is a popular summer resort.

Woodstock, having a population of about 3,000, is situated on the right bank of the St. John, in the centre of a fine agricultural district. It has important wool, grain and lumber mills.

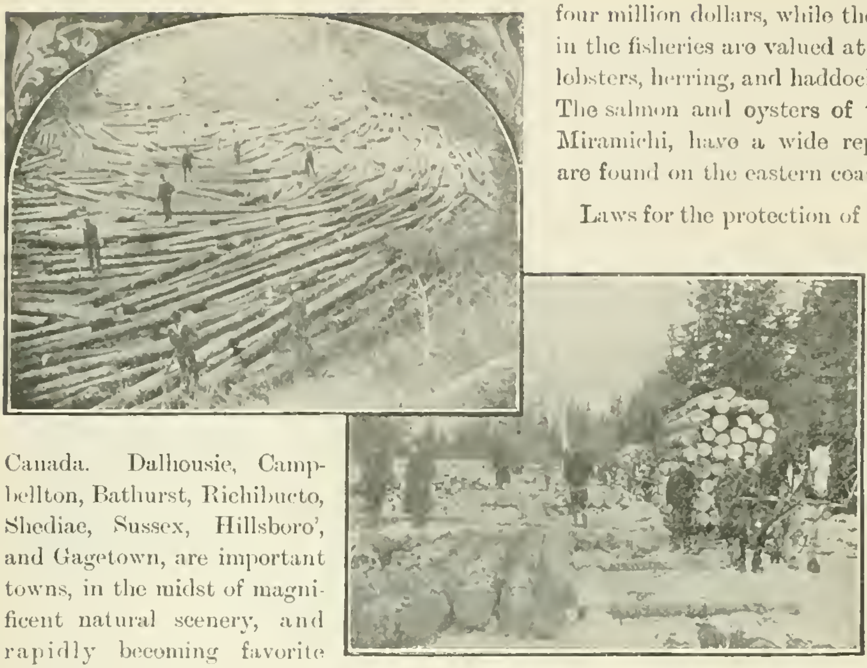
Chatham, population about 4,900, situated on the right bank of the Miramichi, has an excellent harbor, a large lumber trade, and several important manufactories.

Newcastle, population 2,500, six miles farther up the Miramichi, on the left bank, is at the head of deep water navigation. It carries on a large lumber trade.

Sackville is the home of Mount Allison University and Colleges. Near it are the Tantramar marshes.

Memramcook is the seat of a Roman Catholic University. The Penitentiary for the Maritime Provinces is at Dorchester. Marysville, on the Nashwaak, about two miles from Fredericton, is a centre of the lumber industry, and contains the largest cotton factory in

HAULING A SALMON SEINE



Logging Scenes on the Miramichi.

Canada. Dalhousie, Campbellton, Bathurst, Richibucto, Shediac, Sussex, Hillsboro', and Gagetown, are important towns, in the midst of magnificent natural scenery, and rapidly becoming favorite resorts for tourists.

Edmunston, in the County of Madawaska, about 265 miles from the mouth of the St. John river, is a town of considerable importance.

Soil and Products.—The soil, especially along the courses of the rivers, is very fertile. The uplands are a light loam, generally free from stone, and under good cultivation yield bountiful crops. Westmoreland, Kings, Queens, Sunbury and Carleton counties contain some of the finest agricultural tracts in the world.

All kinds of vegetables may be grown in great abundance. The hardier fruits, as apples, plums, cherries, currants, strawberries, etc., under intelligent and well-directed labor, yield highly profitable returns.

In many sections the uplands are well adapted for sheep-raising.

Few countries in the world are so well wooded as New Brunswick. Her forests of hard and soft woods are exceedingly valuable.

Animals.—Moose, caribou and deer roam through the forests. Wild ducks, geese and partridge are abundant. The streams abound in smelt, trout, salmon and other fish. The fox, bear, mink and musk-rat are found in great numbers.

The fisheries of New Brunswick are of great value. The annual value of these fisheries is about four million dollars, while the boats, vessels, and nets employed in the fisheries are valued at $2,000,000. Cod, mackerel, shad, lobsters, herring, and haddock, form the chief part of the catch. The salmon and oysters of the Gulf Coast, and smelts of the Miramichi, have a wide reputation. Extensive oyster beds are found on the eastern coast. Lobsters are plentiful.

Laws for the protection of fish and game are rigidly enforced.

Minerals.—The mineral resources of New Brunswick are very important, and the Government is taking active steps for their development. At the head of Grand Lake is a valuable coal deposit. Graphite has been found to some extent in St. John County. In Albert are very extensive beds of pure white gypsum. Bituminous shale and Albertite are also found. On the Tobique are profitable deposits of gypsum, of reddish and chocolate colors. The granite quarries of this province are of great value. The product of the red granite quarries of St. George has a rich, reddish color when polished. Limestone of most excellent quality is abundant in New Brunswick, and is largely quarried at St. John. Antimony is found at Lake George, in York County. Manganese is found in large quantities in Kings. New Brunswick is rich in quarries of freestone. Salt, iron and sulphur springs are found in different parts of the province.

Grindstones, French Fort Quarries, Newcastle, N.B.

Climate.—The climate of New Brunswick is healthful. It is less subject to extremes than that of Ontario or Quebec. In winter, the atmosphere is not as dry as t is farther north.

Summer and autumn are exceedingly pleasant, and vegetation is very rapid.

Industries.—The chief industries are farming, fishng, lumbering, mining and manufacturing.

The people of New Brunswick are making rapid advancement in agriculture through the adoption of schools for dairying, poultry and stock-raising.

The great lumber trade is still one of the first industries, giving constant employment to great numbers of men. Many are engaged in fishing. The Government keeps the lakes and streams well stocked with the best varieties. An ever-increasing number of the people find employment in the cotton and woollen mills, the boot and shoe factories, the foundries, sugar refineries, pulp mills and tanneries. Shipping and commerce engage the attention of a large portion of the population.

Communications.—New Brunswick is well supplied with first-class communication with all parts of Canada, the United States, and the great trading centres of the world.

Subsidized lines of steamers run from St. John to Liverpool, London, Manchester, Glasgow, Belfast and Dublin.

The chief railways are the following: The Intercoonial, belonging to the Federal Government, runs from St. John northerly through the entire length of the province, and connects it with all parts of Nova Scotia, Prince Edward Island, Quebec, Ontario and the West; the Canada Eastern, running in a north-easterly direction, connects Fredericton with Miramichi Bay; the Canadian Pacific, extending west from St. John, gives communication with Northern and Western Canada, and all parts of the United States.

There are several minor lines of railways.

Fine steamers ply upon all the chief rivers, as well as between St. John and Nova Scotia, and Shediac and Prince Edward Island.

Education.—New Brunswick has a fine system of free, non-sectarian public schools, consisting of primary, intermediate and secondary schools.

At Fredericton are the Normal School and Provincial University, supported by the Government.

The chief denominational schools are Mount Allison University, maintained by the Methodists, and St. Joseph's College, belonging to the Roman Catholics.

Government.—The government of New Brunswick consists of the Lieutenant-Governor, appointed by the Federal Government, and a House of Assembly of 46 members, elected for four years. The Legislative Council was abolished in 1892.

History.—New Brunswick was first settled by the French, about the year 1605. Along with Nova Scotia and Prince Edward Island, it was included in the grant made to De Monts in 1603, under the name of Acadia, a name supposed by some to have been derived from a Micmac word, "ā k ă d ē," indicating "abundance." In 1713, however, the French tried to restrict this name to Nova Scotia, and New Brunswick did not become an undisputed part of the British Empire until the conclusion of the Treaty of Paris, in 1763.

The first permanent European settlement in New Brunswick was made between the years 1632–35. At this date, Charles La Tour, having received a grant of this part of Acadia, had built a fort on what is now the harbor of St. John, probably on the west side, opposite Navy Island.

The first settlement attempted by the English was in 1763, when a few families from New England took possession of the country, about seventy miles from the mouth of the St. John. To this colony the name Maugerville was given.

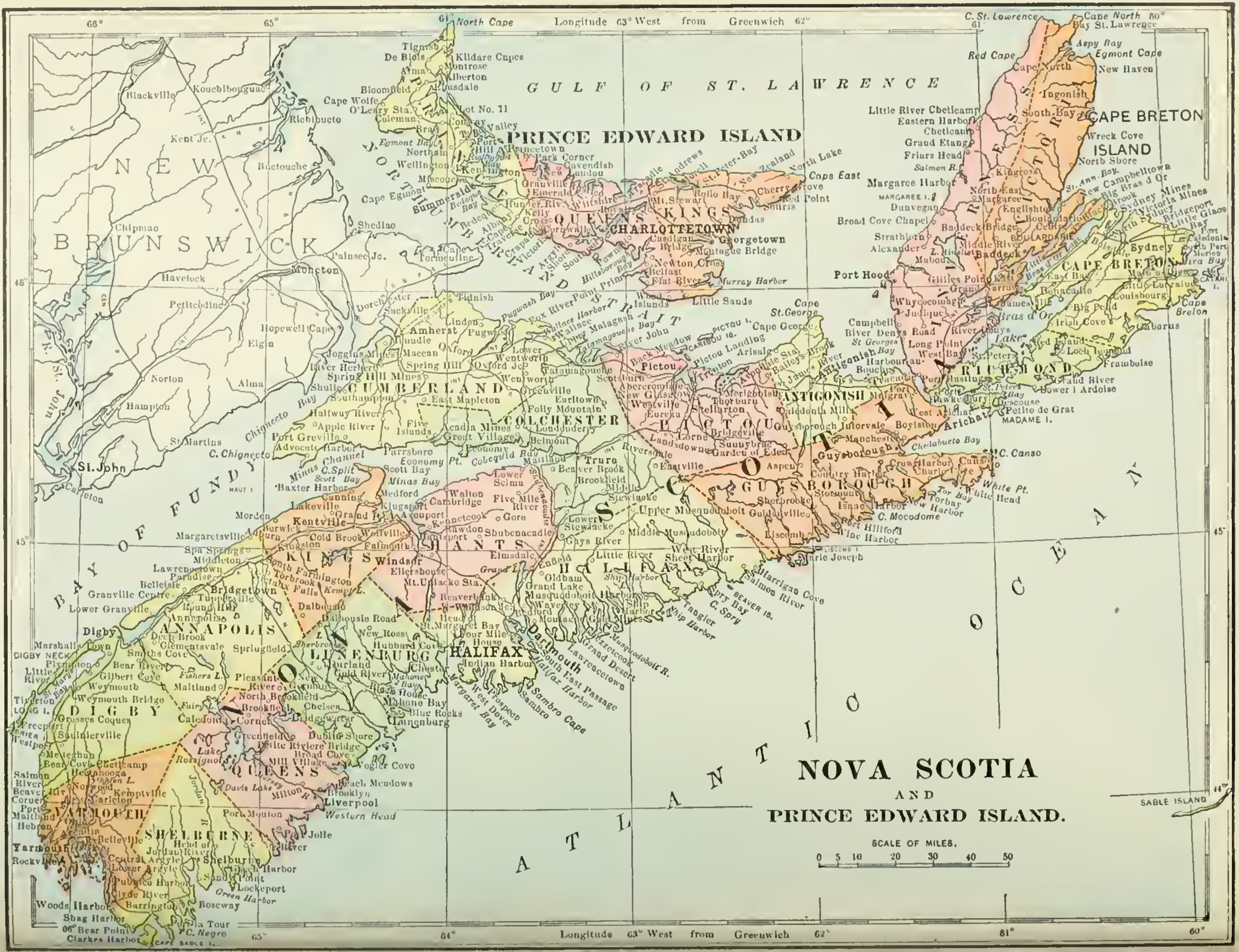
A second English settlement was made in 1764, by a body of Scotch farmers and laborers. These made a home for themselves in the Miramichi and adjoining districts. On May 18th, 1783, a large body of United Empire Loyalists landed in the harbor of St. John, and formed a settlement known at first as Parr Town, from the name of the Governor of Nova Scotia at that time. In the following year, 1784, New Brunswick, which up to this time had formed part of Nova Scotia, was made a separate province, and placed under the administration of Governor Carlton. The first Legislature met at St. John, Jan. 3rd, 1786, but the seat of government was removed to Fredericton in 1788. New Brunswick remained a distinct province until 1867, when it united with Nova Scotia, Quebec and Ontario to form the Dominion of Canada.

CITIES AND CHIEF TOWNS OF NEW BRUNSWICK.

Population, 1901.

St. John	40,711	Woodstock	2,984	Sussex	2,289	St. George	1,588	Dalhousie	912
Moncton	9,026	St. Stephen	2,840	Milltown	2,044	Dorchester	1,246	Richibucto	760
Fredericton	7,117	Campbellton	2,652	Bathurst	1,899	Shediac	1,171	Shippegan	436
Chatham	4,868	Newcastle	2,507	Sackville	1,679	St. Andrews	1,061		

Locate the above cities and towns.



NOVA SCOTIA
AND
PRINCE EDWARD ISLAND.

NOVA SCOTIA.

Map Studies.

What name do you apply to a body of land as nearly urrounded by water as Nova Scotia? What island 'orms part of the province? How is it separated from he mainland?

What separates Nova Scotia from Prince Edward sland? Give all the boundaries of Nova Scotia.

Docks at Halifax.

Public Gardens, Halifax.

What lake is in the western part of Nova Scotia? What lake is in Cape Breton?

What bay lies to the north-west of the rovince? Name the other bays along he coast. Which are the two largest ays in the province?

What cape is at the southern point of Nova Scotia? At the north-east corner of the mainland? At the orthern point of Cape Breton?

What is the capital of the province? Where is it ituated? What town is nearly opposite it? Locate he cities and towns in the list on page 108.

Name the counties in Cape Breton; on the Bay of 'undy; on Northumberland Strait; on the Atlantic.

In what county is Halifax? Sydney? Truro? Spring Hill Mines?

What railways do you find in Nova Scotia? What places does each railway connect?

Are there any large rivers in Nova Scotia? Why?

Where does the Shubenacadie empty? The Mersey?

Physical Features.—The west and north-west are mountainous. The rest of the province is hilly, with very fertile valleys. The north end of Cape Breton is high and bold. The long coast-line is one of the most remarkable features of Nova Scotia. The coast is generally rocky.

Climate.—The climate is mild and healthful. The excellence of the climate is due to its being nearly surrounded by the ocean, and to the influence of the Gulf Stream.

Population and Government.

The present province of Nova Scotia, called Acadia in early times, was the scene of the first permanent French settlement in North America. In 1713 Nova Scotia passed into the hands of the English.

Of the present population of the province, some trace their descent from the early French settlers, some are European immigrants of a later date, but many are descendants of the old New England colonists and of the United Empire Loyalists. The Government is the same in form as that of Quebec.

Industries.

Mining.—The mineral wealth of Nova Scotia is vast and varied. Coal is the most important product. It is found principally in Pictou and Cumberland counties, and in the eastern part of Cape Breton. The Pictou coalfields are characterized by seams of great thickness, and have been worked for many years. The gold mines are situated chiefly along the Atlantic slope of the peninsula, the gold being obtained from quartz ore of a comparatively low grade. Gypsum, iron, manganese, copper, building stone, and other minerals, are found in considerable quantities.

Grand Pré, N.S.

Fishing—The fisheries of Nova Scotia are of very great importance. They afford occupation to nearly thirty thousand men, employing over 14,000 boats and vessels. The value of the fish obtained is about one-third of that of the whole Canadian product. The chief varieties are cod, mackerel, lobsters, herring, and haddock. Nova Scotia has a remarkably extensive coast-line, and fine harbors. These advantages account for her prominence in the fishing and shipping industries.

Agriculture.—The soil, especially in the valleys, is very productive, except near the coast. Hay, oats, and potatoes are the largest crops. Nova Scotia exports more apples than any other province, except Ontario. Many cattle are raised.

Chief Towns and Cities.

Halifax, the capital of the province, is its only city. It was founded in 1749, by the British government, as a means of securing the hold of Britain upon Acadia. It has a splendid harbor, open all the year round, and possesses one of the finest dry-docks in the world. It has an important shipping trade, doing a large business with the West Indies. It is one of the most effectively fortified cities in Canada, and is occupied by a strong garrison of Imperial troops. It is also the chief station of the British North Atlantic Squadron. Halifax is the eastern terminus of the Intercolonial Railway.

Yarmouth, situated at the south-western extremity of the province, has a large shipping trade. Its registered tonnage in 1898 was 39,882. Its lumbering and fishing industries are very extensive. Important steamship lines ply between Yarmouth and Boston.

Truro is the seat of the Provincial Normal School.

Windsor had a registered tonnage of 83,547 in 1898 ranking next to Montreal.

Pictou and **New Glasgow,** on Northumberland strait, are very busy commercial towns. They are in the heart of the coal regions, and besides their mining industries they have large shipping interests and are rapidly developing their manufactures.

Sydney is the chief town of Cape Breton. It is noted for its coal trade.

Annapolis, on Annapolis basin, is the oldest town in Nova Scotia, and is full of historic interest. It was the Port Royal founded by Champlain; but its name was changed when the English finally took possession of Acadia.

Liverpool and **Lunenburg,** situated on the Atlantic coast between Halifax and Yarmouth, are of importance as lumbering and fishing centres. They carry on a large trade with the West Indies.

Cities and Chief Towns of Nova Scotia.

Population, 1901.

Halifax	40,832	Amherst	4,963	Windsor	3,398
Sydney	9.909	Dartmouth	4,806	Pictou	3,235
Yarmouth	6,430	New Glasgow	4.447	Lunenburg	2,916
Truro	5,993	Springhill	3,430	Liverpool	1,937

PRINCE EDWARD ISLAND.

Map Studies.

What separates Prince Edward Island from New Brunswick? What body of water lies to the north of the island?

What bay is north of Prince Edward Island? What one on the east? Name three on the south-west.

What is the capital of the province? Where is it situated? Name three other important towns.

Name the counties of Prince Edward Island. In which county is the capital?

Draw a map of the island, and mark on it the railway and the most important towns on its route.

History.—Prince Edward Island was originally part of the French territories known as Acadia, and then bore the name of Isle St. Jean. It was given its present name about a hundred years ago in compliment to Prince Edward, Duke of Kent, father of Queen Victoria, who was at that time commander of the forces at Halifax.

Parliament Buildings, P.E.I.

Physical Features.—The province is undulating, but has only slight elevations. The long coast-line is its most striking feature.

Soil and Climate.—The soil is light but kindly, and the climate moderate and healthful.

People.—Most of the people are native born, the majority of them being of Scottish descent. Of the remainder, some are English, some are Irish, and still others descendants of the original French settlers.

Government.—There is but one "house," consisting of thirty members, styled "The Legislative Assembly." Fifteen of these named councillors are elected by property voters, and the other fifteen by the franchise voters.

Industries and Manufactures.

Agriculture, in its different branches, furnishes the chief occupation of the people. Wheat, oats, barley, potatoes and turnips are the principal crops. Much attention is paid to the raising of superior breeds of horses, cattle, sheep and pigs.

Prince Edward Island fisheries are the best in the Gulf of St. Lawrence. The total number of men engaged in the trade is about four thousand. Mackerel, cod, oysters and lobsters form the bulk of the product.

Manufactures are carried on only to a small extent for the supply of local markets.

Chief Towns.

Charlottetown, the capital and largest town, is situated on the south side of the island, at the mouth of a long inlet known as Hillsborough River. It has a splendid harbor, and does a thriving trade. It is the chief distributing centre for the whole province.

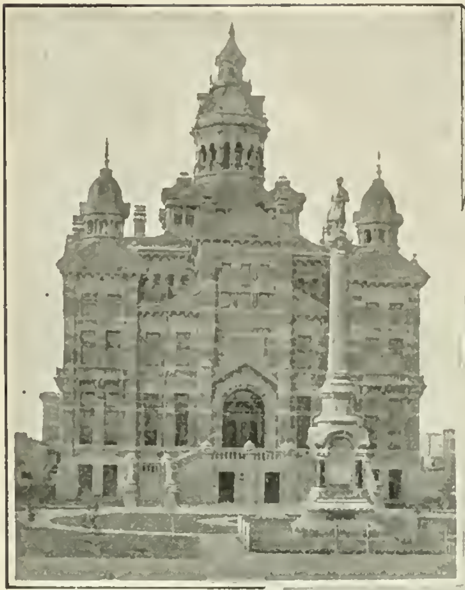
Summerside, on Bedeque bay, has an excellent harbor, and carries on a large trade with New Brunswick, just across the strait. The province is famous for its oysters, and Summerside is the centre of the oyster industry.

Cities and Towns of Prince Edward Island.

Population, 1901.

Charlottetown	12,080
Summerside	2,875
Georgetown	1,123

MANITOBA



City Hall, Winnipeg.

Parliament Buildings, Winnipeg.

Map Studies.

What Districts lie to the north and west of Manitoba? What province to the east? What country to the south?

What is the name of the largest lake in Manitoba?

What large river flows into it from the south? What important tributaries has this river? What river flows into the same lake from the north-west? *(See map, page 72.)* What other lakes are there in Manitoba?

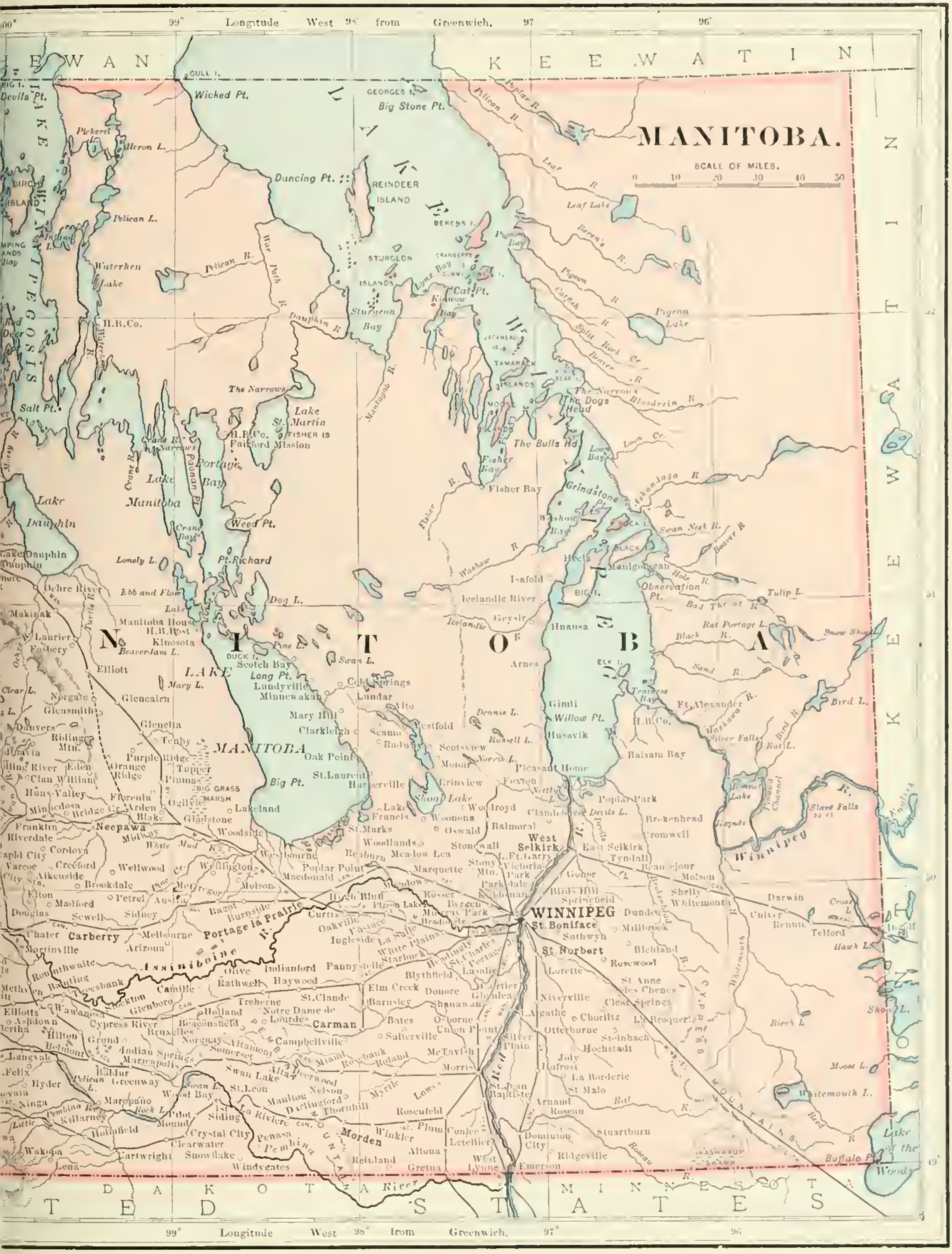
Where is Winnipeg situated? Portage la Prairie? Brandon?

Locate on the map—Emerson, Rapid City, Minnedosa, Morris, Birtle, Carman, Deloraine, Stonewall, Carberry, Virden, Morden, Manitou.

Trace the railways in Manitoba and mark the most important towns on them. Name the railways that enter Winnipeg.

Why is the site of Winnipeg a good place for a great city?

History.—In 1812 Lord Selkirk purchased from the Hudson's Bay Company a vast tract of land on the Red River, and settled thereon a band of Scotch and Irish pioneers. It was called Assiniboia, and was governed by the Hudson's Bay Company, from Fort Garry. When, after Confederation, the Dominion Government purchased the North-


MANITOBA.
SCALE OF MILES.
0 10 20 30 40 50
Longitude West 98° from Greenwich. 97 96°
99°
100°
K E E W A T I N
E W A N
LAKE WINNIPEG
LAKE WINNIPEGOSIS
LAKE MANITOBA
M A N I T O B A
D A K O T A
T E D S T A T E S
M I N N E S O T A
K E E W A T I N
WINNIPEG
St. Boniface
West Selkirk
East Selkirk
Portage la Prairie
Assiniboine R.
Red R.
Winnipeg R.
Neepawa
Carberry
Carman
Morden
Emerson
Gretna
Dominion City
Morris
St. Norbert
St. Jean Baptiste
St. Agathe
Niverville
Lorette
Stonewall
Gimli
Hnausa
Arnes
Icelandic River
Isafold
Big I.
Black I.
Elk I.
Deer I.
Grindstone Pt.
Observation Pt.
Fisher Bay
Fisher R.
The Bulls Hd.
The Dogs Head
The Narrows
Loon Bay
Washow Bay
Washow R.
Bloodvein R.
Berens R.
Pigeon R.
Pigeon Lake
Leaf R.
Leaf Lake
Poplar R.
Pelican R.
Split Rock Cr.
Catfish R.
Beaver R.
Loon Cr.
Manigotagan R.
Hole R.
Tulip L.
Bad Throat R.
Rat Portage L.
Black R.
Sand R.
Snow Shoe L.
Traverse Bay
Ft. Alexander
H.B. Co.
Bird L.
Bird R.
Silver Falls
Rat L.
Slave Falls
Whitemouth R.
Whitemouth L.
Birch L.
Shoal L.
Moose L.
Hawk L.
Lake of the Woods
Buffalo Pt.
Big Stone Pt.
Georges I.
Gull I.
Wicked Pt.
Dancing Pt.
Reindeer Island
Berens I.
Sturgeon Islands
Sturgeon Bay
Lynx Bay
Cat Pt.
Kinwow Bay
Cranberry I.
Commissioner I.
Jackhead
Tamarack Islands
Moose Islands
Pigeon Bay
Dauphin R.
Mantagao R.
Pelican R.
War Path R.
Pelican L.
Heron L.
Pickerel L.
Birch Island
Big I.
Devils Pt.
Jumping Sands Bay
Waterhen Lake
Waterhen R.
Inland L.
Red Deer Pt.
H.B. Co.
Salt Pt.
The Narrows
Lake St. Martin
Fisher Is.
H.B. Co.
Fairford Mission
Crane R.
Crane Narrows
Portage Bay
Pamon Pt.
Lake Manitoba
Crane Bay
Weed Pt.
Pt. Richard
Lake Dauphin
Dauphin
Lonely L.
Ebb and Flow Lake
Dog L.
Ochre River
Turtle R.
Makinak
Laurier
Fosbery
Manitoba House
H.B. Post
Kinosota
Beaverdam L.
Elliott
Duck I.
Scotch Bay
Long Pt.
Pine L.
Swan L.
Lundyville
Minnewakan
Cold Springs
Lundar
Alto
Mary Hill
Clarkleigh
Seamo
Westfold
Radway
Scotsview
Mount
Oak Point
St. Laurent
Harperville
Shoal Lake
Erinview
Foxton
Pleasant Home
Netley L.
Clandeboye
Devils L.
Poplar Park
Brokenhead
Cromwell
Tyndall
Beausejour
Molson
Shelly
Whitemouth
Darwin
Culver
Rennie
Telford
Ingolf
Cross L.
Dennis L.
Russell L.
Norris L.
Woodroyd
Woonona
Oswald
Balmoral
Lake Francis
St. Marks
Woodlands
Meadow Lea
Rexburn
Stony Mtn.
L. Ft. Garry
Victoria Park
Parkdale
Kildonan
Gonor
Birds Hill
Springfield
Dundee
Millbrook
Richland
Rosewood
Sathwyn
St. Anne des Chenes
Clear Springs
Choriltz
La Broquerie
Otterburne
Steinbach
Hochstadt
Joly
Rafrost
La Borderie
St. Malo
Arnaud
Rosseau
Roseau R.
Stuartburn
Ridgeville
Rat R.
Cypress Mountains
Sprague
Letellier
Plum Coulee
Altona
Rhineland
West Lynne
Winkler
Reinland
Pembina R.
Pembina Mountains
Penasa
Windygates
Snowflake
Clearwater
Crystal City
Cartwright
Holmfield
Killarney
Pilot Mound
La Riviere
Manitou
Darlingford
Thornhill
Nelson
Roseufeld
Lowe
Myrtle
Deerwood
Altamont
Somerset
Swan Lake
St. Leon
Wood Bay
Siding
Rock L.
Maropano
Greenway
Baldur
Pelican L.
Mariapolis
Indian Springs
Grund
Norquay
Campbellville
Miami
Rosebank
Roland
McTavish
Silver Plain
Union Point
Osborne
Shanawan
Glenlea
Cartier
Lasalle
Blythfield
Donore
Elm Creek
Barnsley
Bates
Salterville
Notre Dame de Lourdes
Holland
Beaconsfield
Treherne
St. Claude
Rathwell
Haywood
Indianford
Olive
Pannystelle
Starbuck
Headingly
St. Charles
White Plains
La Salle
Ingleside
Oakville
Curtis
High Bluff
Pigeon Lake
Murray Park
Rosser
Meadows
Marquette
Poplar Point
Macdonald
Westbourne
Wellington
Molson
McGregor
Austin
Bagot
Burnside
Sidney
Melbourne
Arizona
Petrel
Wellwood
Brookdale
Woodside
Gladstone
Lakeland
Big Grass Marsh
Ogilvie
Plumas
Tupper
Purple Ridge
Orange Ridge
Tenby
Glenella
Glencairn
Mary L.
Norgate
Glensmith
Riding Mtn.
Clear L.
Danvers
Eden
Clan William
Bruns Valley
Minnedosa
Bridge Cr.
Franklin
Riverdale
Florenta
Arden
Blake
Midway
White Mud R.
Rapid City
Cordova
Creeford
Varcoe
Aikenside
Elton
Madford
Douglas
Sewell
Chater
Martinville
Rounthwaite
Brandon
Beresbank
Camille
Glenboro
Wawanesa
Cypress River
Bruxelles
Elliotts
Ashdown
Bertha
Hilton
Belmont
Langvale
Felix
Hyder
Ninga
Wakopa
Lena
Methven
Stockton
Souris R.
Red R.

under the name of Manitoba (1870). Under the care of the Canadian government immigration flowed in rapidly, the city of Winnipeg rose suddenly at the junction of the Assiniboine with the Red River, and Manitoba grew in a few years to be an influential and prosperous province.

Size and Position. Manitoba is the central one of the seven provinces of the Dominion of Canada. It is situated near the centre of the North American continent, being midway between the Atlantic and the Pacific oceans. It is called the "prairie province." It is larger than Wales, Ireland and Scotland combined, having an area of about 74,000 square miles.

Physical Features.—Manitoba consists chiefly of rich, level prairie land. There are elevated districts in the south-west, the west, the north, and especially the north-eastern portion of the province. The northern and north-eastern parts have many lakes. The north-east is well supplied with timber.

Winnipeg.

Climate.—The summers are warm and very pleasant; the winters are severe. Owing to the dryness of the air, the low temperature in winter is not so severe in its effects as in places where there is more moisture. The climate is healthful and invigorating.

Soil.—The soil of Manitoba is for the most part a rich deep mould or loam, especially adapted to wheat-growing. Manitoba wheat is of the finest quality. Other grain, and root-crops, give astonishing yields on this inexhaustible soil, growing with wonderful luxuriance through the hot summer.

People.—The population of the province came chiefly from Great Britain and eastern Canada. The French element is also strong. The remainder of the population is made up of immigrants from various countries of northern and central Europe. There are interesting colonies from Russia and Iceland.

Government.—The Government is similar to that of Ontario, there being only one Chamber in the Legislature.

Occupations of the People.—The wealth of Manitoba lies in its fertile and easily tilled soil, so that agriculture is now, and always will be, the most important industry. In addition to wheat, oats, barley and potatoes, which are the principal field crops, the soil and climatic conditions are very favorable for the growth of flax and hemp. Much attention is given to stock-raising and dairy-farming.

The lakes of the province abound in fish, and the annual product of the fisheries is already considerable. The people give little thought, as yet, to manufactures. Lumbering is carried on to some extent in the northern and eastern sections, for the supply of local needs The chief export of Manitoba is wheat.

Cities and Chief Towns.

Winnipeg, situated at the junction of the Assiniboine and the Red River, is the capital of Manitoba, and the chief centre of distribution for all north-western Canada. It is the largest city in the province, and the most important as regards its literary, educational, and manufacturing interests. It is a great railway centre, and has fine means of communication by water. From its situation it bids fair to be to the north-west what Montreal is to the east.

Brandon on the main line of the C. P. R., one hundred and thirty-three miles west of Winnipeg, has great grain elevators, and does a large export trade in wheat.

Portage la Prairie is on the main line of the Canadian Pacific Railway, fifty-six miles west of Winnipeg. It is the centre of an important agricultural district and has fine flour mills.

Cities and Towns of Manitoba.

Population, 1901.

Winnipeg	42,340	Selkirk	2,118
Brandon	5,380	St. Boniface	2,019
Portage la Prairie.	3,901	Morden	1,522

BRITISH COLUMBIA.

Map Studies.

What mountain range separates British Columbia m Alberta? Name some of the highest peaks in this ige. Name the mountain passes in the Rockies. iat other mountain ranges are in the Province?

What large island forms part of the Province? How t separated from the mainland of the Province? How m the United States? What other nds lie along the Pacific Coast?

In what direction do the rivers of Brit- Columbia flow? Why? Name three the largest rivers. Are there any es? Name them.

Victoria, B.C.

Draw a map and locate on it the chief ers, and the leading cities and towns.

w do you account for the fact that these cities and ns are placed in their present positions?

Trace the railways of the province.

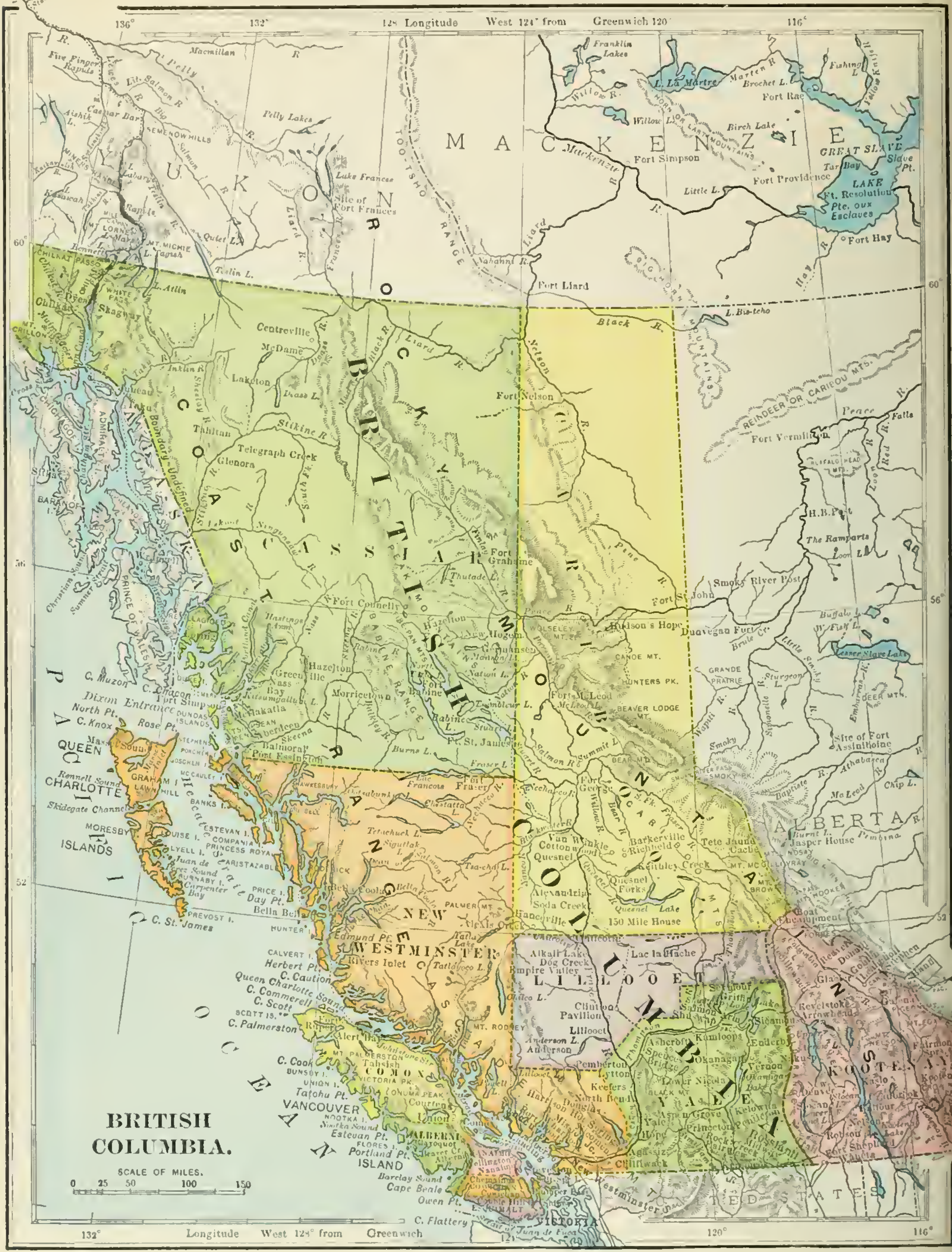
Position and Size.—British Columbia is the st westerly province of Canada. It is about seven ndred miles long, extending from the 49th to the h parallel of latitude, and has an average width of ut four hundred miles. It is the largest province of nada.

Physical Features.—The province is chiefly mountainous. Between the great ranges are elevated table-lands. These table-lands are cut into narrow valleys by rapid rivers. The coast has many bays, somewhat like the fiords of Norway. The scenery of British Columbia is magnificent.

Climate.—The climate of British Columbia, as is natural in so immense a territory, varies a great deal in the different districts. The mild winds from the Pacific moderate the climate along the coast, where all the crops of temperate countries may be grown. The southern part of the interior is dry, with very hot summers. Farther to the north-west, in the same region, between the Rocky Mountains and the Coast Range, the rainfall is much greater and the heat less excessive. Everywhere the western slopes of the mountain ranges are moist, the eastern ones dry. This is caused by the eastward flow of the air currents, which deposit their moisture in ascending the western sides of the mountains, and then descend on the opposite sides as dry winds. In the extreme north the climate is of sub-Arctic severity.

Parliament Buildings, Victoria.

Government.—The Government consists of a Lieutenant-Governor and one Legislative Assembly as in Ontario.



BRITISH COLUMBIA.

Vater-front, Vancouver, B.C.

Vaucouver, B.C.

Resources.—In regard o both variety and volume, he resources of British olumbia are among the ichest in Canada. The rovince has immense areas of mineral wealth, forests of great extent and value, oast waters and streams abounding in fish, and many arge districts well adapted for agriculture and grazing.

Mines.—The minerals of most importance are gold and coal. The gold mines are among the most valuable in the world. Immense quantities of gold have been obtained by washing gravel from the beds of the Fraser and its tributaries. Very rich mines are operated in the Kootenay region, the largest of which are at Rossland, and in Cariboo, Omineca, and the Boundary Country. Very rich coal mines are found in the south-eastern part of the province, and on Vancouver Island. Valuable deposits of silver, lead, and copper are also located in different parts of the province.

Lumber.—The most important forest tree is the Douglas fir, which on the coast frequently attains a height of from two to three hundred feet, with a diameter of from eight to ten feet. It is only one, however, of the many splendid trees which make the forests of British Columbia famous throughout the world. Lumbering is a great and growing industry along the coast.

Fisheries.—The abundance of fish in the waters of her rivers and coast supplies a large part of British Columbia's trade. Of these fish, the most valuable is the Salmon, which frequents the waters of the Fraser nd Columbia in astonishing numbers. Other important varieties are halibut, sturgeon, herring, trout, and cod. Throughout the province there are numerous canneries, which annually ship millions of cans of salmon. The coast Indians are largely engaged in this industry.

Agriculture.—In the southern parts and along the Pacific are situated the most important agricultural districts, but there are large areas in the more northerly interior which will support a farming population. Agriculture is yearly engaging more and more attention throughout the province. Wheat, barley, oats and peas are the principal grain crops. Fruit is also grown to some extent, and is certain to become an important crop owing to the suitability of the climate.

Cities and Chief Towns.

Victoria, the capital of British Columbia, has a situation of great beauty on a small but excellent harbor, at the south-eastern extremity of Vancouver Island. In early times it was a post of the Hudson's Bay Company, and was then called Fort Victoria. This city is one of the largest in the province, has numerous fine buildings, parks, and gardens, and is the centre of important business and shipping interests.

Rossland, B.C.

"The Loop," in the Selkirks, B.C.

Vancouver, on Burrard Inlet, is the western terminus of the Canadian Pacific Railway. It is surrounded by a fertile country, and enjoys an exceptionally mild climate. It is the centre of the lumber trade of the province. Extensive iron, soap, and cement works are located here, in addition to a sugar refinery, and numerous factories for canning fish.

New Westminster was founded in 1858, during the Fraser river gold excitement. It is situated on the north bank of the river about fifteen miles from the mouth. The salmon trade and lumber business are its chief industries.

Nanaimo.—North of Victoria, and on the east coast of Vancouver Island, is situated the thriving town of Nanaimo, which depends largely on its coal mines for its support.

Kamloops and **Revelstoke** are mining towns on the main line of the Canadian Pacific Railway, and **Nelson, Rossland, Kaslo** and **Sandon** are mining towns in Kootenay.

Cities and Chief Towns of British Columbia.

Population, 1901.

Vancouver	26,133	Nanaimo	6,130	Revelstoke	1,600
Victoria	20,816	Nelson	4,610	Kamloops	1,594
New Westminster	6,498	Kaslo	1,680	Trail	1,360
Rossland	6,164	Fernie	1,640	Greenwood	1,359

SASKATCHEWAN.

Map Studies.

What Province lies east of Saskatchewan? What one west of it? What territory is north of it? East of it? What country lies south of Saskatchewan?

Give the boundaries of Saskatchewan. Name three large lakes in the northern part of the province. What is the outlet of Lake Athabasca? Of Lake Wollaston?

Trace the basin of the Churchill River. Near what place do the north and south branches of the Saskatchewan river unite?

Draw a map of Saskatchewan and on it trace the railroads of this province. Locate the chief places mentioned on page 118, on this map. Trace and name the chief rivers flowing through this province, on your map.

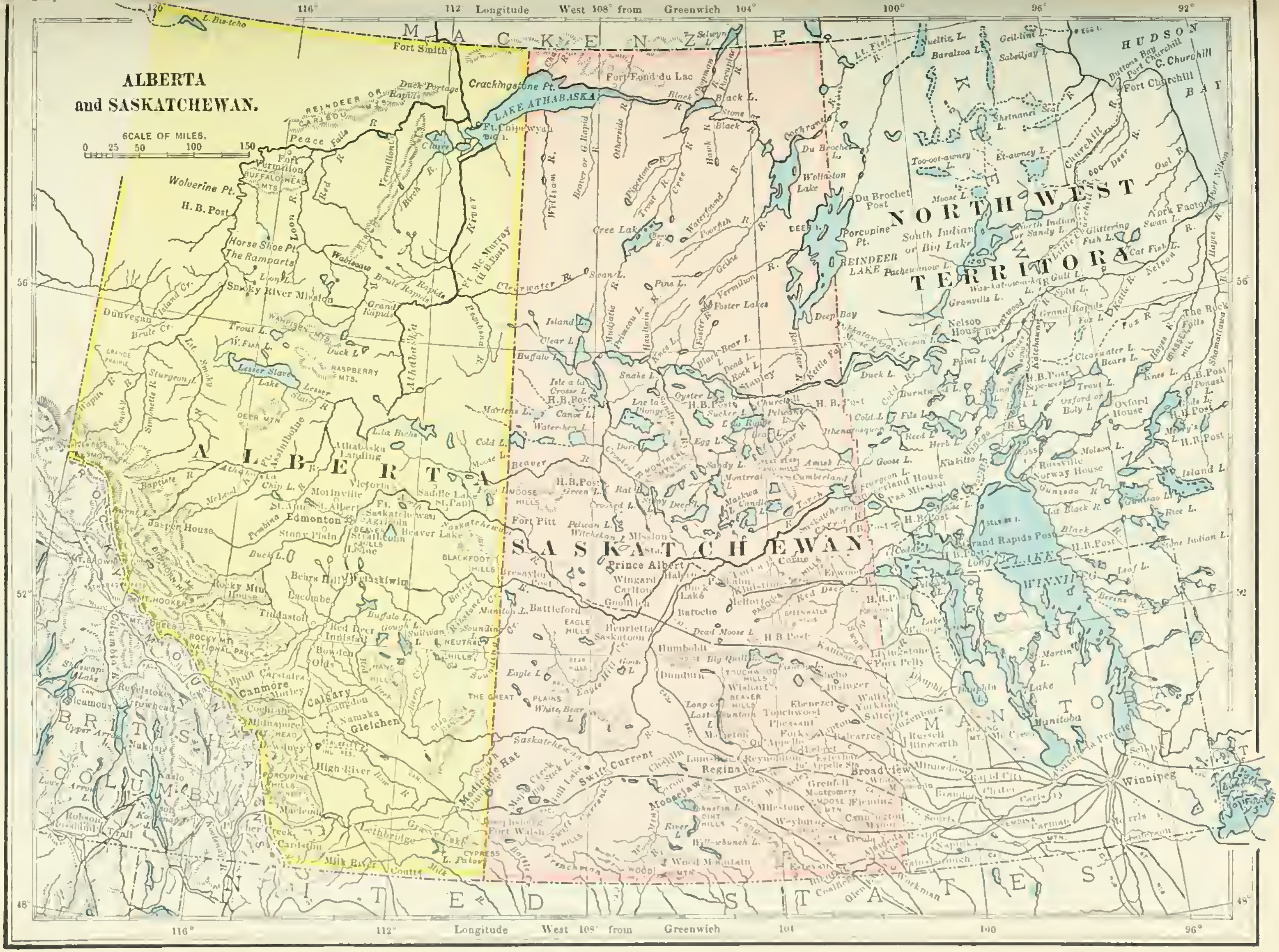
Position and Size.—Saskatchewan lies between Manitoba and the North-West Territory on the east and Alberta on the west. It stretches from the international boundary line to the 60th parallel, a distance of more than 750 miles. In width it varies from nearly 400 miles at the south to about 250 miles at the north. Its area is estimated at 250,650 square miles.

Physical Features.—The greater part of the Province of Saskatchewan lies in the second prairie steppe. This steppe is bounded on the east by an escarpment consisting of the Pembina, Riding, Duck, Porcupine, and Pasquia Mountains. On the west the bounding escarpment has various names, as the Dirt Hills, Vermillion Hills, The Coteau, Bear Hills, and Eagle Hills. The average altitude of this steppe is 1,600 feet.

The surface is more rolling than the Red River valley and is dotted with many lakes. Stretches of alkaline wastes and outcroppings of sand alternate with immense areas of arable land. The southern part consists of open or bluffy prairie, while in the north, it is more or less densely covered with forests.

Climate.—There are four well-marked seasons in this province. As it is situated in the interior of the continent, the climate is subject to extremes. The days are long and warm in summer and short and cold in winter. The air is dry, invigorating, and healthful, and there is much sunshine throughout the year.

The Government.—The government is similar to that of Manitoba, there being only one chamber in the Legislature.



ALBERTA and SASKATCHEWAN.

Resources.—Grain growing and dairying are the chief industries of Southern Saskatchewan. In the north there are extensive forests of White and Black Spruce, Banksian Pine, Balsam Poplar, Aspen Poplar, Birch, and Tamarac. The forest belt is from 200 to 300 miles wide. South of the forest belt, before the open prairie is reached, is a bluffy region of varying width. The bluffs supply the settlers on the prairie with fuel. In the south-western part of the province there are fine grazing lands over which immense herds of cattle and horses and flocks of sheep roam.

Cattle herding on the Great Plains.

Chief Towns.

Regina, the Capital, is situated on the main line of the Canadian Pacific Railway in the southern part of the province. It is surrounded by a rich agricultural country. The Provincial Normal School is situated here as well as the headquarters of the North-West Mounted Police.

Prince Albert is on the North Saskatchewan, a little west of the junction with the south branch. Farming and lumbering are the chief industries carried on in the vicinity.

Maple Creek and **Battleford** are ranching centres.

Moose Jaw and **Medicine Hat** are important divisional points on the C.P.R.

Broadview, Indian Head, and **Qu'Appelle** are agricultural towns.

Chief Towns of Saskatchewan.

Population, 1901

Regina	2,645	Moosomin	868	Battleford	51
Prince Albert	2,193	Qu'Appelle	842	Wolseley	45
Moose Jaw	2,042	Indian Head	768	Grenfell	45
Medicine Hat	1,975	Yorkton	700	Wapella	39

ALBERTA.

Map Studies.

What country is south of Alberta? Give the western boundary of this province. What province lies east of Alberta? West of it? What territory is north of it?

Give the capital. On what river is the capital situated? On what river is Calgary?

In what direction do the rivers of Alberta flow? Name six rivers flowing through this province.

Draw a map of Alberta and on it mark the location of the towns mentioned on page 119.

Trace the railroads of the province on this map. Trace the head waters of the South Saskatchewan on the map. Of the Athabasca.

Position and Size.—Alberta lies between the international boundary line on the south and the 60th parallel on the north, and between the summit of the Rocky Mountains and the 120th meridian on the west, and the 110th meridian on the east. It is about 750 miles in length with a breadth varying from 200 miles at the south to nearly 400 miles at the 50th parallel. Its area is estimated at 253,540 square miles.

Physical Features.—The southern portion of this province occupies the third prairie steppe. This steppe has an average elevation of 3,000 feet and extends from the international boundary to the North Saskatchewan. Its surface is much diversified. The foot-hills of the Rocky Mountains extend along its western borders. From these, innumerable deep ravines or coulees wend their way out into the open plain. The Rocky Mountains rise west of the third prairie steppe and the eastern half of this chain lies in this province.

These mountains are much higher in the south and centre than they are in the north. Their snow-clad peaks, several of which rise to a height of 10,000 feet, may be een at a distance of more than a hundred miles. The rincipal passes through this chain are the North Kootenay, 6,800 feet; Crow's Nest, 5,500 feet; Kicking Iorse, traversed by the C.P.R., 5,300 feet; Yellowhead, ,733 feet; Pine River, 2,850 feet, and the Peace River, 2,000 feet.

The highest peaks in Alberta are Mount Murchison, 3,500 feet, Mount Hooker, 13,500, and Mount Brown, 6,000 feet.

This steppe is drained principally by the Saskatchewan nd its many tributaries.

In the northern and north-eastern part of the province, he surface is an undulating plain, rossed in places by a few ranges of ow hills. It is drained by the Peace nd Athabasca rivers.

Between these rivers, the plain is hickly timbered but northward the ountry is more open. The Peace River flows through a rich alluvial lain well suited for agriculture and grazing. Wheat, oats, and barley ave been successfully grown here or many years.

Climate.—On the whole the limate of Alberta is warmer than hat of Saskatchewan. This is nainly due to the influence of the Pacific Ocean. In the south-western art of the province there are regions where the rainfall is insufficient for agricultural purposes. To overcome his drawback, irrigation works are eing constructed and, as the soil is fertile, it is expected that thousands of square miles of what is now grazing land will be rendered suitable for grain growing.

Government.—The government is similar to that f Ontario, Manitoba and Saskatchewan.

Resources. In southern Alberta, the climate is uch that range animals live out of doors all winter, pon the naturally cured grasses of the plains. The airy industry is being rapidly developed by the stablishment of creameries at various points throughout entral Alberta.

Lumbering is carried on in the Northern Saskatchewan alley and along a number of other streams.

Gold is found in paying quantities in the bed and anks of the North Saskatchewan near Edmonton.

Coal is found in large quantities throughout Alberta. The principal mines are now located near Lethbridge, Canmore, Anthracite, and Edmonton.

Oil of good quality has been discovered in Alberta. Already a number of wells have been sunk in the southern part of the province, and throughout the entire western parts oil exists in unknown quantities.

Chief Towns.

Edmonton, the Capital, on the North Saskatchewan, is one of the oldest Hudson's Bay posts in the west. It is the chief distributing point for the far north. It is surrounded by a country well adapted for mixed farming.

Banff National Park, Alberta.

Calgary is the largest town in the province. It is an important railway point and is the centre of an extensive ranching district.

Macleod and **Lethbridge** are also ranching centres.

Wetaskiwin, 40 miles south of Edmonton, is a rapidly growing town. It is situated in the centre of a fine farming district. Mixed farming is being extensively tried in its neighborhood.

Chief Towns of Alberta.

Population, 1901.

Edmonton.	2,626	Strathcona	1,550	Wetaskiwin	630
Calgary	4,152	Red Deer . .	851	Cardston...	691
Lethbridge.	2,279	Macleod. .	796	Mountain View .	532
Ft. S'katchewan	1,587	Leduc	783	Lacombe.....	450

THE TERRITORIES.

The Yukon.

The Yukon Territory consists of a vast area lying between the 60th parallel and the Arctic Ocean, and reaching from Alaska on the west to the North-West Territory on the east. Its area is estimated at 196,100 square miles.

This territory is more or less mountainous throughout its whole extent. It is a country of rolling hills, mountain ranges, and navigable streams. The southern portion of the territory consists of the upper basin of the Yukon River. Here are to be found many large rivers, tributaries of the Yukon, such as the Lewes, Pelly, Stewart, Porcupine, Macmillan, Klondike, and others.

Washing Gold on the Klondike.

Lying so far to the north, the summer season is short and the climate is subject to extremes of heat and cold. Garden vegetables grow to a large size at Dawson. The great value of the country lies, however, in the minerals, principally gold, which was discovered in great quantities in 1896 and 1897. Copper, iron, and coal have also been discovered.

The discovery of gold in the Klondike has opened up an important trade for Vancouver and Victoria, as well as for the coast cities of the United States.

North-West Territory.

The remaining part of Canada, containing 1,933,000 square miles, is called the North-West Territory. This immense area includes the former Districts of Mackenzie, Keewatin, Ungava, and Franklin. It stretches from the Yukon Territory on the west to the possessions of Newfoundland in the Labrador Peninsula in the east.

This region is entirely unsettled except where the Hudson's Bay Company have their trading posts. Indians live in settlements about these posts. They engage chiefly in hunting and fishing. Large quantities of valuable furs are annually collected and exported. The remainder of this region is roamed over by Eskimo in the north and by Algonquin Indians in the extreme south.

The basin of the Mackenzie River occupies the northwest part of this territory. This river is nearly 2,500 miles long, being the second largest in the continent. After leaving Great Slave Lake, it winds through a level alluvial plain and is navigable for about 1,200 miles from its mouth. The climate is such that trees a foot in diameter grow in the delta of this river, and garden vegetables are produced at the various posts scattered along the river.

The region known as the Barren Lands occupies a large part of the territory to the west of Hudson Bay and north of the 60th parallel.

The part to the east of Hudson Bay occupies the northern part of the peninsula of Labrador. (See map, page 73.) It may be described as a table-land, having an elevation of 1,500 to 2,000 feet. Its rolling surface, made up largely of marshes and bare rock, is dotted with innumerable lakes and traversed by countless streams. The severity of the climate, and the absence of sufficient soil, render this district unsuitable for either agriculture or grazing. The forest belt of Canada extends across the southern portion of this region, while, towards the north, the country, for the most part, is only capable of producing mosses and lichens. The few inhabitants of this inhospitable land, mostly Eskimo, live along the sea coast, and earn a livelihood by hunting and fishing.

To the north, and mainly within the Arctic Circle, lie (See map, page 73) the numerous islands and peninsulas situated north of the continent. A very large portion of this region remains unexplored. The whale, seal and walrus are found in the neighboring seas, and the musk-ox and reindeer roam over the islands.

NEWFOUNDLAND.

Size. — Newfoundland is about twice as large as Nova Scotia, having an area of 42,200 square miles. Its greatest length is about four hundred miles, and its greatest width three hundred and twenty miles. It is shaped like a triangle, and has a very irregular coast line, with many harbors.

Soil and Climate. — The soil of the island, at least in the inhabited districts, is not very well adapted for agriculture, to which little attention has as yet been given. But along some of the rivers, and at the heads of bays and inlets, the hardier crops are successfully cultivated. On account of the Arctic current which brings down icebergs along the eastern coast, spring is often deayed, and the change from winter to summer is very sudden. The climate of the western shore is much milder than that of the Atlantic coast.

Government.—The Governor is appointed by the King, and, like other provincial governors, he is assisted in his office by an Executive Council. The Legislature is like that of Nova Scotia.

St. John's Harbor, Nfd.

The People and their Industries. — The popuation of Newfoundland in 1901, including that of Labrador, was estimated to be 220,984. Around the hief towns farming is carried on for the local market. Barley, oats, potatoes, and garden vegetables are the hief crops.

Though the island possesses some fine forest areas, umbering is not yet largely developed. Of minerals, he most important is copper, and within the last few ears Newfoundland has taken rank as the fifth in he list of copper-exporting countries. There are also ilver and lead mines. Large quantities of iron are xported annually, and coal mines and oil wells are eing developed. At present, however, the people of Newfoundland live mainly by the fisheries. By the census of 1901 there were 1,679 fishing vessels engaged in this industry, and 26,457 fishing boats. The principal varieties of fish caught are cod, herring, lobster, and salmon. The cod fisheries are the most important in the world, and are carried on partly around the shores and partly on what are called the Grand Banks. These lie to the south and east of the island, and are in all over six hundred miles long by about two hundred in breadth. They form a wide submarine plateau covered by a depth of water averaging about forty fathoms. Upon these banks fish of all kinds, and particularly cod, abound.

Next to the cod fisheries the seal fisheries are the most important. In the spring large fields of Arctic ice are brought down to the shores of Newfoundland by the Arctic current. To these floating ice-fields the seals resort in herds. The sealing ships push their way into these ice-fields and slaughter the seals. The annual capture reaches nearly half a million.

The herring, lobster, and salmon fisheries rank next in importance. A great part of the product of the large herring fishery is sent to the United States in a frozen condition.

Cities and Chief Towns.

St. John's is the capital of the island and the seat of the Government of Newfoundland. It is situated on one of the best harbors in the world. This harbor is said to have been named by John Cabot. St. John's is the commercial centre of the island, and the chief place of export for the product of the fisheries.

Harbor Grace is the second town of Newfoundland, and is situated some distance north of St. John's, on the same peninsula. It has an extensive shipping and mercantile trade, and is the chief outfitting post for the Labrador fishery.

Hearts' Content is a town in Trinity Bay, and is the landing place of the Atlantic cable between Newfoundland and Ireland.

Coast near San Francisco.

Coast of Maine.

THE UNITED STATES.

NOTE.—The relief map of North America on page 54, and the key on page 55, should be consulted for answers to some of the following questions. Most of them may be answered from the map on page 123.

Map Studies.

What states are separated by the Delaware river? By Delaware bay? By Chesapeake bay? By the Potomac river? By the Savannah river?

Name the states along the gulf of Mexico. In which state is the delta of the Mississippi? What two gulf states are separated by the Mississippi river? What river flows between Texas and Mexico?

Which states border on Lake Erie? On Lake Michigan? On Lake Superior?

Name the states along the north bank of the Ohio. On what lake does each of these states border? What states are on the south bank of the Ohio?

In what state does the Mississippi river rise? Name in order the states along the *left* bank of this river, Name those that lie along the *right* bank.

What states are crossed by the Missouri river? Between which does it flow? Across what states does the Arkansas river flow?

What states are crossed by the Rocky mountains? What states border on the Colorado river? Which are separated by the Columbia river? In what state is the Great Salt lake?

What states border on Mexico? On the Pacific ocean? On Canada?

Name the six New England states.

Write out a list of the United States, with their capitals. Bound the United States.

Which states border on the Atlantic ocean? Which of these states contain no part of the coastal plain?

What state in the New England highland has no seacoast? Where are the White mountains? The Green mountains?

Which of the Great Lakes border on New York? What lake is between that state and Vermont?

Name the river between Pennsylvania and New Jersey. Which states are on Delaware bay? On Chesapeake bay? The city of Washington is in the District of Columbia; on what river is it built?

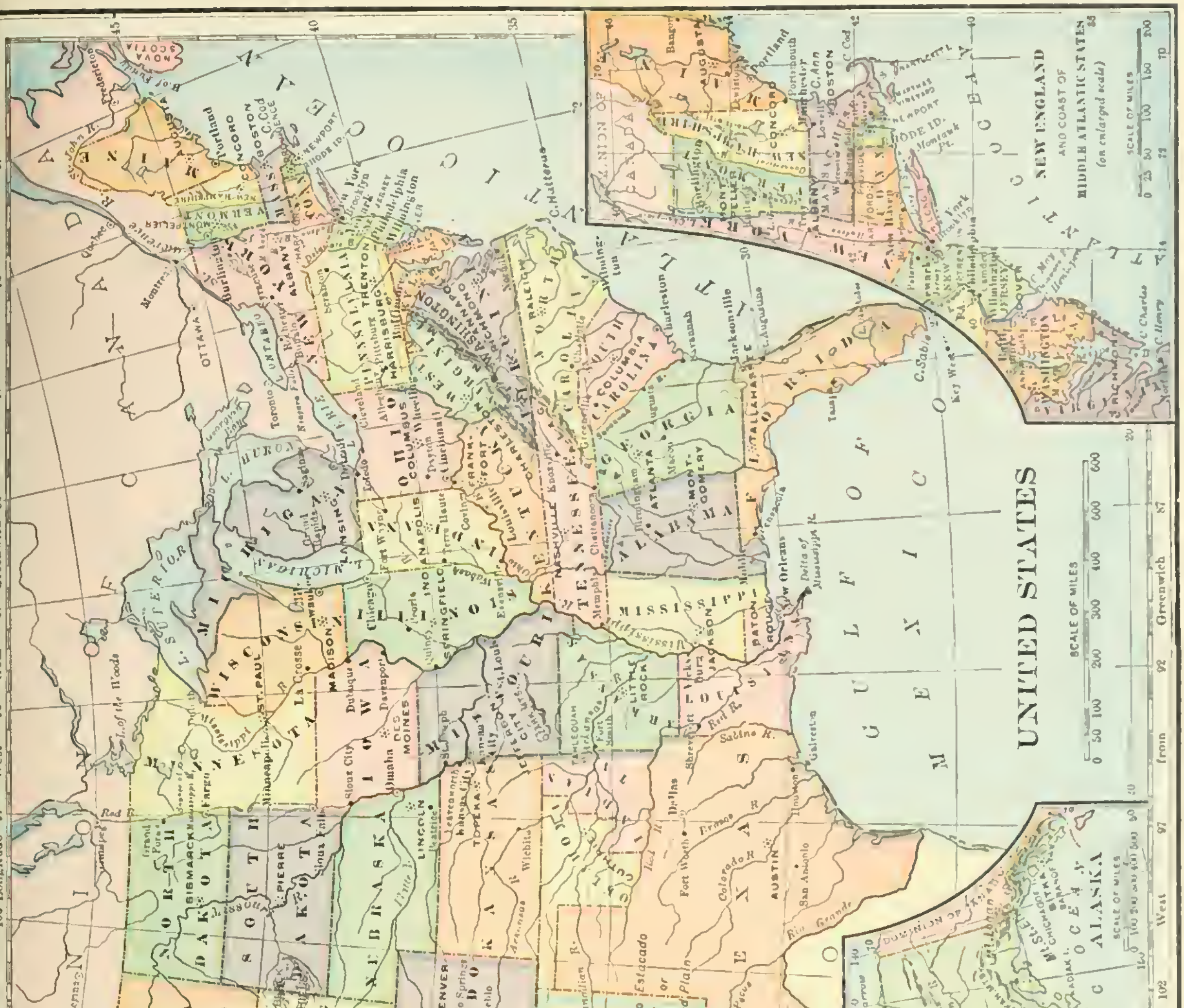
Between what states does the Savannah river flow?

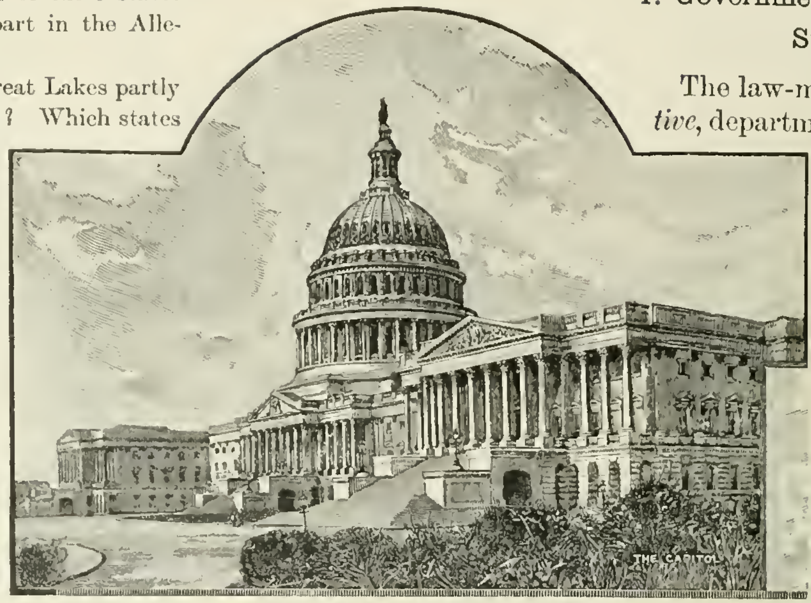
What states are crossed by the divide between the Atlantic and the Gulf coastal plains?

Between what states does the Ohio

Coast of Southern California.

Coast of Florida.


UNITED STATES
SCALE OF MILES
0 50 100 200 300 400 500 600
Longitude West from Greenwich
127 122 117 112 107 102 97 92 87 82 77 72 67
45 40 35 30
DOMINION OF CANADA
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
Gulf of California
LOWER CALIFORNIA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASS.
CONN.
RHODE ID.
L. SUPERIOR
L. MICHIGAN
L. HURON
L. ERIE
L. ONTARIO
NEW ENGLAND AND COAST OF MIDDLE ATLANTIC STATES (on enlarged scale)
ALASKA
ARCTIC OCEAN
BERING SEA
ALEUTIAN ISLANDS
DOMINION OF CANADA
GREENLAND
UNITED STATES
MEXICO
CENTRAL AMERICA
SOUTH AMERICA



river flow? Which of these states are wholly or in part in the Alleghany plateau?

Which of the Great Lakes partly surround Michigan? Which states are partly in the St. Lawrence basin and partly in the Mississippi basin?

Which states are partly in the prairies and partly in the Western plains?

Locate the following cities in the United States and try to decide from their location why they became great cities. Make a list of them, with the states in which they are situated:

Cities.	*Population (1900).*
New York	3,437,202
Chicago	1,698,575
Philadelphia	1,293,697
St. Louis	575,238
Boston	560,892
Baltimore	508,957
Cleveland	381,768
Buffalo	352,387
San Francisco	342,782
Cincinnati	325,902
Pittsburg	321,616
New Orleans	287,104
Detroit	285,704
Milwaukee	285,315
Washington	278,718
Newark	246,070
Jersey City	206,433
Louisville	204,731
Minneapolis	202,718
Providence	175,597
Indianapolis	169,164
KansasCity, Mo.	163,752
St. Paul	163,065
Rochester	162,608
Denver	133,859
Allegheny	129,896
Omaha	102,555
Albany	94,151

Name the two states that are almost wholly in the Great Basin region. What three states include the Columbia river region? What states are crossed by the Cascade range? In which state is the Sierra Nevada?

Name two territories crossed by the Arkansas river? Which is the largest state in the United States?

What bodies of water partly surround Alaska? What country is on the east of that territory? Where are the Pribilof islands?

Name the leading cities of the United States on the Great Lakes.

1. Government of the United States.

The law-making, or *legislative*, department of the United States is known as *Congress*. It consists of two bodies—the *Senate* and the *House of Representatives*.

The representatives are chosen by the people. The senators are chosen by the law-making bodies, or *legislatures*, in the various states. There are two senators from each state, but the representatives are chosen according to the number of people in each state. Senators are elected to serve for six years; representatives, for two years.

The head of the nation is called the *President*. He is elected to serve for four years, and his chief duty is to enforce or execute the laws. He is Commander-in-chief of the army and navy of the United States.

To aid in conducting the government, the President (with the approval of the Senate) appoints eight men who are known as members of the *Cabinet*. These officers superintend the foreign affairs, the money, the army, the navy, the home affairs, the law cases, the post offices, and the agricultural interests, of the nation.

Cotton Field.

The *Supreme Court* of the United States con- ists of a *Chief Justice* and eight *Associate* *ustices* appointed by the President, with the onsent of the Senate, and holding office for fe or during good behaviour.

Public Gardens, Boston.

The chief duty of the Supreme ourt is to protect the rights of e people, according to the Con- itution.

All powers that the states did not ive to the nation under the Con- itution, they reserved for them- elves. There are now forty-five states, and each esembles a republic. Each has its constitu- on, its Senate and House of Representatives, s Supreme Court, its chief executive officer, alled a *Governor*—as well as other officers.

Some portions of the country do not belong to any state, but are known as *territories.* Their governors and judges are appointed by the President, with the consent of the Senate, but the people of each territory elect their other officers. The Territories have also their own legislative bodies.

There are now five territories, as follows:—Alaska, Arizona, Indian Territory, New Mexico, Oklahoma. From time to time, as the territories increase in population, they are admitted into the Union as states.

Water Front, New York.

The city of Washington, with its suburb Georgetown, is on a tract of land set apart for the use of the government. This tract is known as the *District of Columbia.* It is neither a

A Scene in New Orleans.

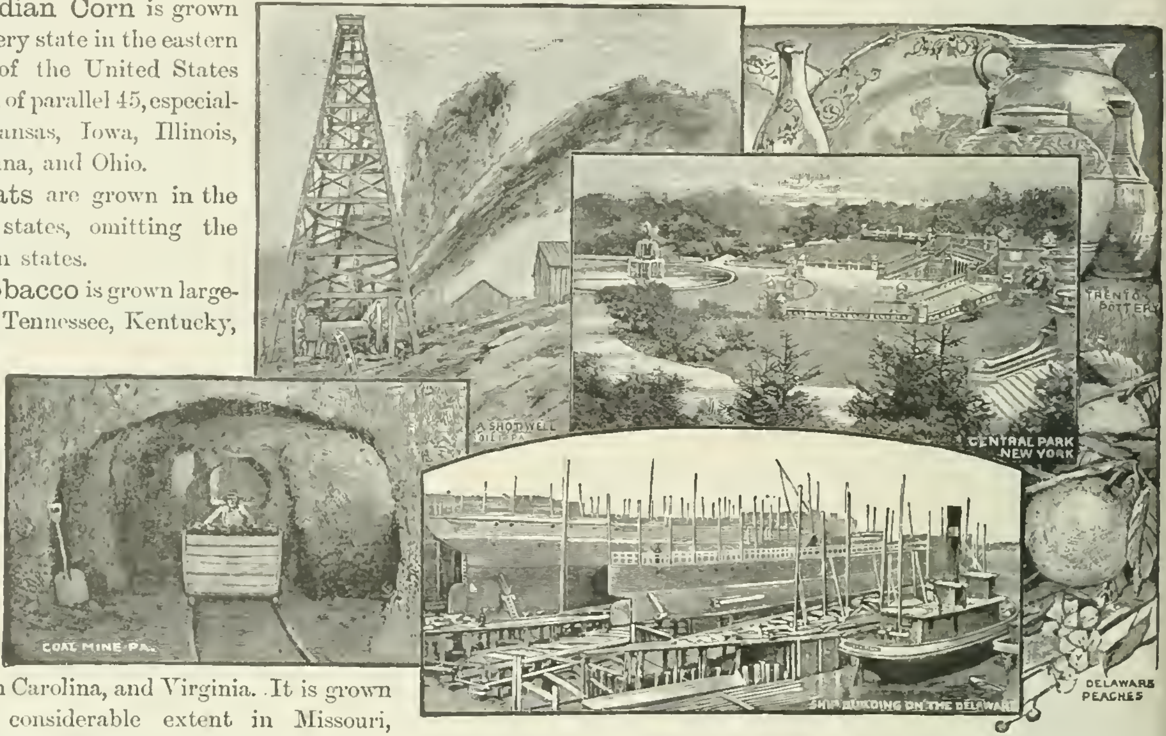
state nor a territory, but is under the control of Congress.

2. Chief Products.

Cotton is the chief product of the states on the Gulf of Mexico, with Arkansas, South Carolina, and North Carolina. Some cotton is grown in Missouri and Tennessee. Fall River and Lowell make more cotton cloth than any other American cities.

Draw a small map of the United States, and color the states that produce cotton.

Wheat is grown in the states north of the cotton states in the eastern half of the United States, and small quantities are also grown on the Pacific Slope.



Indian Corn is grown in every state in the eastern half of the United States south of parallel 45, especially Kansas, Iowa, Illinois, Indiana, and Ohio.

Oats are grown in the corn states, omitting the cotton states.

Tobacco is grown largely in Tennessee, Kentucky, North Carolina, and Virginia. It is grown to a considerable extent in Missouri, Maryland, Pennsylvania, New York, and southwestern New England.

Forests—The central portion of the United States is prairie land, on which there is very little timber. The states along the Great Lakes, all the Southern States east of Kansas, Oklahama Territory, and Texas, and all the Northern States east of Indiana, are well wooded. The Northern States on the Pacific, and the northern part of the Rocky Mountain Highlands have large forests. The best lumber regions are along Lake Superior, in the Southern States bordering on the Mississippi, in the Appalachian Highlands, and in northern New England.

Fruit—California, Florida, Maryland, Delaware, and New Jersey are the chief centres of the fruit trade o the United States. Apples are grown largely in the northern states from New England to Nebraska, as fa north as Wisconsin, and in Kansas, Missouri, and northern Kentucky. Grapes are grown around Lake Erie, and the valleys of New York, and largely i California.

Animals—Hogs are raised in large numbers in all the corn-growing states west and south of New York, and beef-cattle in all the states east of the Rocky mountains, between the cotton states and the 45th parallel. Washington, California, and the Rocky mountain valleys are good districts for cattle-raising. The best district for dairy products in the United States is the portion of the northern states east of Nebraska. Sheep are raised in the dairying districts, California, Montana, New Mexico, and Texas. Fish are caught in nearly all waters around the United States, especially along the Northern coasts of the Atlantic and the Pacific.

Minerals—Coal is found in many states, especially in the Appalachian Highland, Illinois, Iowa, Missouri, Kansas and the Rocky Mountain States.

Iron is found in a range of states following the general direction of the Appalachian Highlands from Alabama to Vermont, and in some mines in Texas, Missouri, Minnesota, Colorado, Utah and Montana.

Petroleum is found in large quantities in Pennsylvania, West Virginia, and Ohio.

Gold and Silver are found in all the States of the Rocky Mountain Highland and the Pacific slope, especially in California, Colorado and Montana.

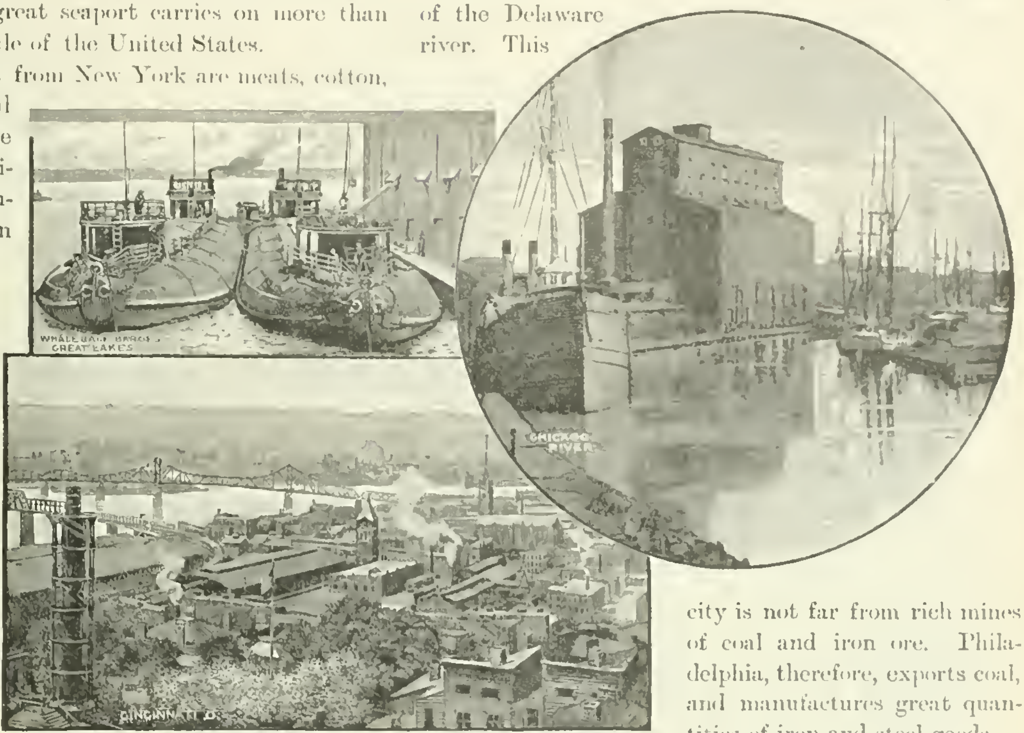
3. Principal Cities.

Washington is the Capital of the United States. It is noted for its beautiful private residences, and its magnificent national public buildings.

New York—In amount of foreign trade, Hong-Kong, London, and Antwerp alone surpass the *port* of New York. This great seaport carries on more than half the foreign trade of the United States.

The chief exports from New York are meats, cotton, petroleum, wheat, and flour. Most of these are sent to Great Britain and other countries of western Europe.

New York's principal imports are—cloth from England, Germany, and France; coffee from Brazil and other parts of tropical America; cane sugar from the West Indies, and beet sugar from Germany; tin plate from England; rubber from Para; tea from China and Japan. New York is the greatest manufacturing centre in America. The total value of the manufactures of this city is greater than that of all the articles of import into the United States.



Brooklyn, Long Island City, and many towns and villages have been annexed to New York, making the total number of people in the city about 3,500,000. The refining of sugar, and the roasting and grinding of coffee and spices are important industries in Brooklyn. It contains a United States navy yard and has dry docks and other facilities for ship-building. New York and Brooklyn are joined by the largest suspension bridge in the world.

Chicago is the greatest railroad centre and lake port in the world. The city ranks first also as a meat, grain, and lumber market. No other city in the union makes as much furniture or as many farming implements. In the manufacture of iron, only Pittsburg surpasses Chicago.

In the value of its manufactures, Chicago ranks second among American cities. The various articles made or prepared for market in a single year in this great city are worth nearly as much as all the goods imported into the United States during the same length of time.

Philadelphia has a fine harbor on the tidal portion of the Delaware river. This city is not far from rich mines of coal and iron ore. Philadelphia, therefore, exports coal, and manufactures great quantities of iron and steel goods.

Philadelphia now leads the world in making woollen carpets. Nearly all the new iron ships of the United States navy are built there.

The foreign trade of Philadelphia is about one-tenth as great as that of New York.

Boston, the chief trade centre of New England, now has a population of more than half a million,—about one-tenth of the people in this group of states. Boston owes its growth largely to the fact that here the railroads from the west reach the chief harbor on the New England coast. Among American cities Boston ranks second in foreign commerce. It has also a large domestic commerce.

St. Louis has a population about equal to that of Boston. The former city is the principal trade centre of the middle Mississippi valley, and is reached by railroads and rivers from nearly all parts. Many of the products of this fertile valley find a market in St. Louis; and this city sends out groceries, clothing, and agricultural implements.

No American city, except Minneapolis, surpasses St. Louis in the production of flour. This great river port is near the Kentucky tobacco district, and ranks next to New York in the manufacture of tobacco goods.

FLOUR MILL MINNEAPOLIS.

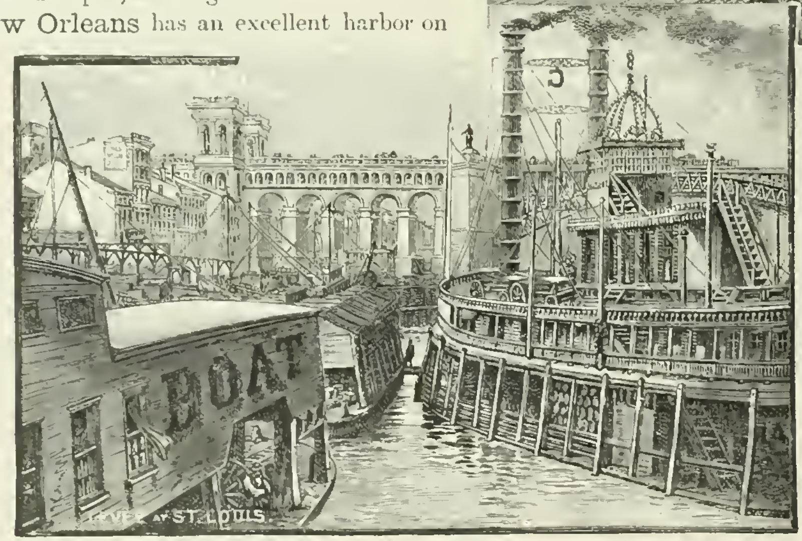
Meat-packing is an important industry in St. Louis.

San Francisco is the natural outlet for the products of the valley of California. More wheat is exported from this sea-port than from any other American city. It leads also in the refining of sugar.

San Francisco has a large inland trade in wheat, flour and fruits. The principal manufactures of the city are clothing, boots and shoes.

Among the imports are silk and tea from China and Japan, and sugar from Honolulu.

New Orleans has an excellent harbor on the Mississippi river, and has grown to be the largest city in the Southern States. Though its important trade in foreign goods is not large, yet its foreign *export* trade surpasses that of every other city in the Union except New York. New Orleans sends yearly to Europe cotton valued at nearly $100,000,000. This city has also a very large trade in sugar, rice and corn. New Orleans has had rapid growth in manufactures.


LEVEE AT ST. LOUIS.

Cincinnati has about ten miles of waterfront on the Ohio river, and fully a score of railroad lines enter this city. The chief manufactures of Cincinnati are clothing and liquors. Meat-packing is an important industry. Many kinds of iron goods are also made here.

Cleveland is within easy reach of the coalfields of Ohio and Pennsylvania; and the oil districts in the same states; of the iron mines of the Lake Superior region; of the soft-wood forests of Michigan, and the hard-wood forests of Ohio.

With these advantages, Cleveland has become a leading city in iron and steel manufactures, in oil refining, in ship-building, and in other great industries. More petroleum is refined in Cleveland than in any other city of the Union.

Minneapolis.—The flour made yearly in Minneapolis could not be purchased by all the gold mined in the United States during the same length of time. No other city in the Union produces one-half as much flour. More than one-fourth of Minnesota is covered with forests of white pine. The Mississippi river, above Minneapolis, is fed by many streams from the forest area, and this city has therefore become the leading lumber market in the Northwest.

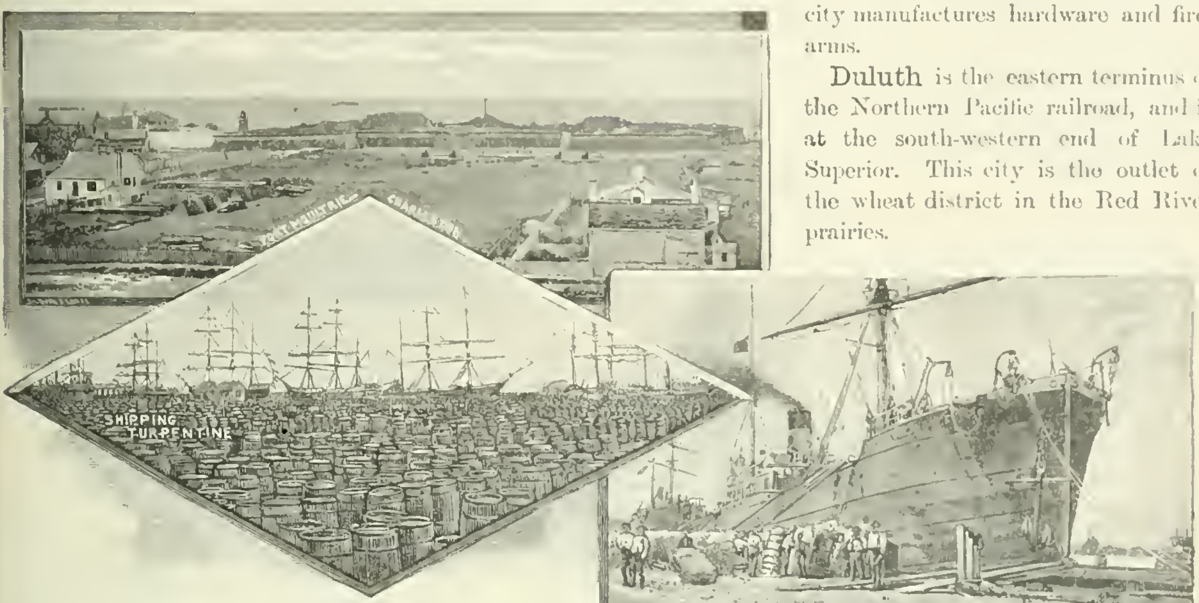
St. Paul is a great railroad centre, and is at the head of steamboat navigation on the Mississippi. The principal industry of this city consists in gathering the products of the surrounding region, and in shipping supplies to the farming and lumbering districts.

Baltimore is on a fine harbor not far from the head of Chesapeake bay. The foreign commerce of this city is about equal to that of Philadelphia. Its bay supplies more oysters than are taken from any other equal area in the world.

Providence, the second city in size in New England, is at the head of Narragansett bay,—a partly drowned valley. This city has great woollen mills, and the largest jewellery factories in the United States.

Buffalo is a great railroad centre, and is the western terminus of the Erie Canal.

Kansas City, Mo., is one of the leading railroad centres in the Mississippi basin. This city, therefore, has an extensive trade with the surrounding agricultural districts. It is one of the greatest markets for farming implements in the country.



Pittsburg's leading industry is the manufacture of iron and steel goods. Among these are locomotives, steel rails, car wheels, and armor plate for ships of war.

Excellent sand for glass-making is found in the upper Ohio valley, and Pittsburg is famous for glassware.

This city has a large trade in soft coal and petroleum.

Indianapolis is the centre of trade of the rich farming and grazing districts of middle Indiana. Several lines of railroad meet in this city. They bring in grain and cattle, and carry back the various kinds of goods which are needed on the great farms. Meat-packing and flour-milling are leading industries in Indianapolis.

Denver is a supply city for mining districts in the Rocky mountains, and for cattle ranches on the Western plains. Few cities in the United States have had a more rapid growth than this state capital of Colorado.

Milwaukee is the second city in size on Lake Michigan. This port has an excellent harbor, and carries on an extensive lake commerce similar to that of Chicago.

Detroit has a fine harbor on the Detroit river. This city, like Chicago and Cleveland, is within easy reach of the lumber and iron regions. Detroit is noted for the manufacture of cars and iron goods.

New Haven is the largest railroad centre and port in Connecticut, and is the seat of Yale University. This city manufactures hardware and firearms.

Duluth is the eastern terminus of the Northern Pacific railroad, and is at the south-western end of Lake Superior. This city is the outlet of the wheat district in the Red River prairies.

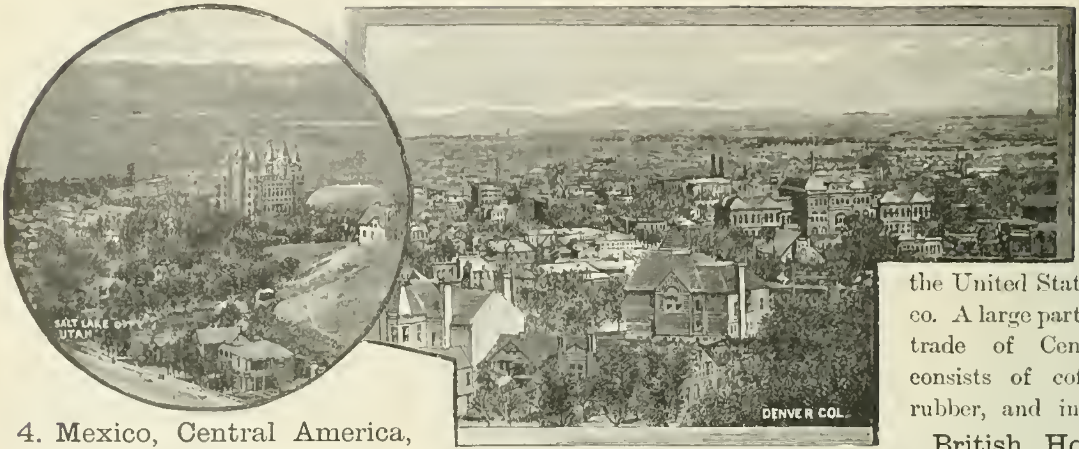
Fall River and Lowell manufacture more cotton cloth than any other two cities in America. It would take three-fourths of all the gold mined yearly in the United States to pay for cotton goods made in Fall River alone.

Portland, the largest city in Maine, is on a fine harbor, and has a large coasting trade. In winter, when the St. Lawrence river is frozen over, Portland serves as a port for.some of Canada's foreign trade.

Omaha is a large railroad centre and a shipping point for cattle and grain.

Charleston is the chief sea-port of South Carolina. This city and Wilmington export more resin and turpentine than any other two ports in the world.

Salt Lake City is an important railroad centre.



4. Mexico, Central America, and the West Indies.

Mexico—About nine-tenths of the people of Mexico live in the uplands, where there is good farming and grazing land. Cattle-raising is a leading industry. Among the agricultural products are coffee, cotton, sugar cane, and tobacco.

Mexico has rich mines of silver and other minerals. The most valuable mines are in the region of the Sierra Madre. This country has few mills or factories. The chief manufacture is cotton cloth.

The leading exports from Mexico are silver, coffee, and cattle. The trade is carried on largely through the ports of Vera Cruz on the east, and Acapulco on the south.

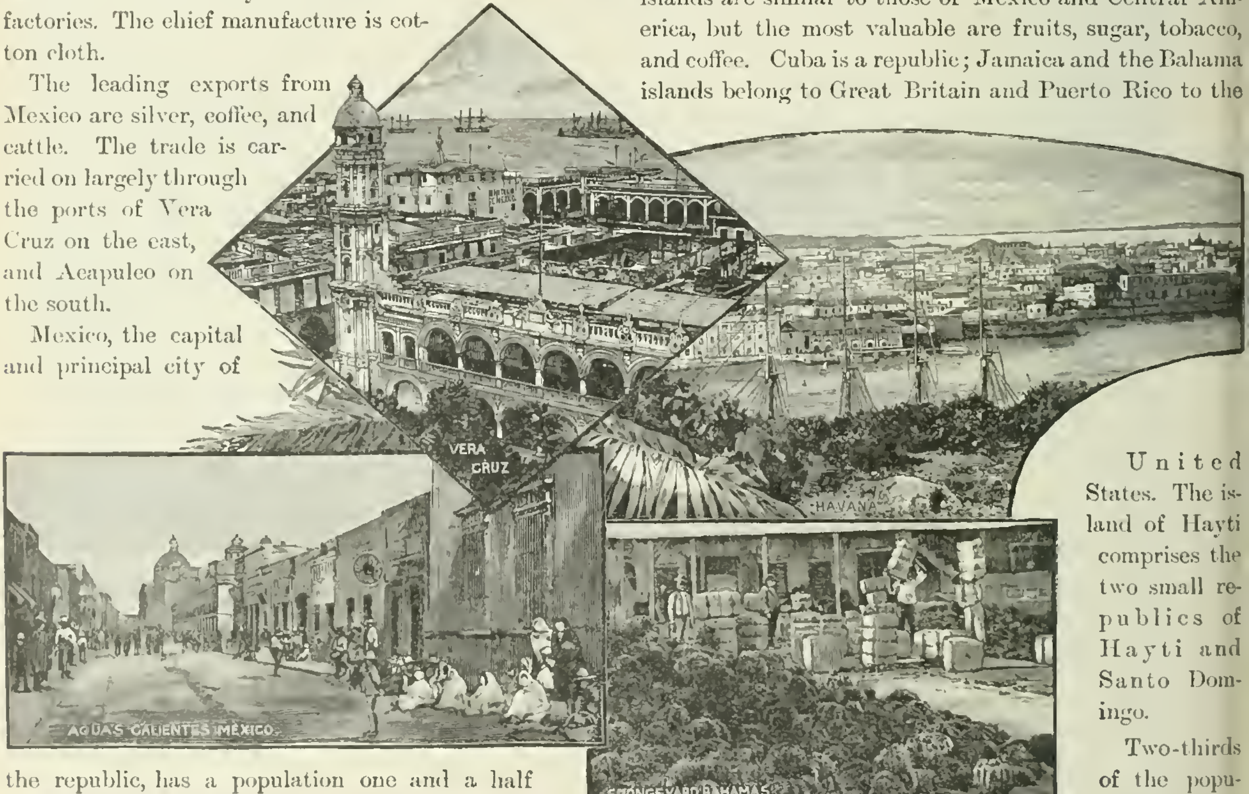
Mexico, the capital and principal city of the republic, has a population one and a half times that of Montreal.

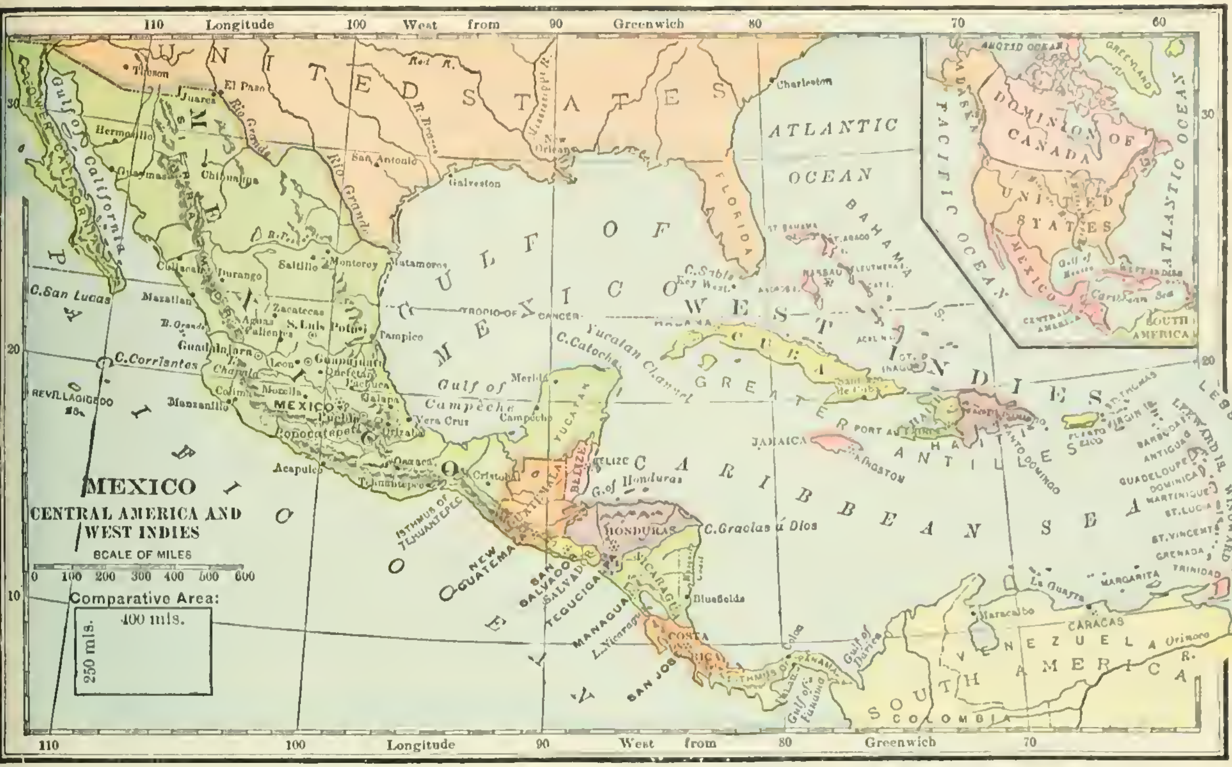
Central America. The small republics in Central America do not form a Union like the states in the United States or in Mexico. A large part of the foreign trade of Central America consists of coffee, bananas, rubber, and indigo.

British Honduras is a British Crown Colony, and consists of a coast strip about one-fourth the size of New Brunswick. It is very valuable on account of the forests of mahogany and dyewoods, which are largely exported. The chief town, Belize, has a good harbor.

West Indies—The name *West Indies* is given to the group of islands which partly enclose the Gulf of Mexico and the Carribean sea. The products of these islands are similar to those of Mexico and Central America, but the most valuable are fruits, sugar, tobacco, and coffee. Cuba is a republic; Jamaica and the Bahama islands belong to Great Britain and Puerto Rico to the United States. The island of Hayti comprises the two small republics of Hayti and Santo Domingo.

Two-thirds of the population of Cuba





are of Spanish descent, but there are many Negroes. Havana, the capital and chief seaport, is one of the greatest sugar markets in the world.

The western half of the island of Hayti is settled chiefly by Negroes ; the eastern half has a mixed population of Negroes and people of Spanish descent. The latter outnumber the former.

The island is divided into two states. The negro republic of Hayti occupies the western part. Port au Prince is the Capital. The Dominican republic occupies the eastern part. Its capital is Santo Domingo.

The British West Indies.—The British West Indian Islands are Jamaica, the Bahamas, and most of the Lesser Antilles. Jamaica is next in size to Cuba and Hayti. The scenery here almost equals that of the Rocky mountains at Banff. The climate in the mountains is healthy. Sugar, coffee, fruits and spice are the chief exports. Kingston is the chief commercial city. It has a fine harbor.

The Bahamas consist of about 20 inhabited islands and several thousand rocks. These are of coral formation. The trade in sponges is large. Coral, green turtles and salt are also exported. Nassau, the capital, is an important health resort.

The Leeward Islands are a group of nine principal islands under one government. St, John, the capital, is on Antigua.

The Windward Islands do not all belong to the British. The southern islands are grouped under a British govenor. Bridgetown, the capital, is on the island of Barbadoes.

Mexican Children.

SOUTH AMERICA.

South America is not so large as North America. Both these continents have the same general outline, narrowing towards the south.

The two lands resemble each other in their relief or surface forms. Each has a long western highland and also a great central plain, with lower eastern highlands.

The isthmus of Panama joins the two parts of America. Along this neck of land, the primary highland consists of a hilly ridge. Passes among the hills are only about three hundred feet above sea level.

This isthmus is only about thirty miles wide, and a man can walk across it in a day. A railway crosses from shore to shore. An attempt is being made to dig a ship canal through the isthmus.

East of the Andes, South America consists chiefly of great plains covered with forests or grass.

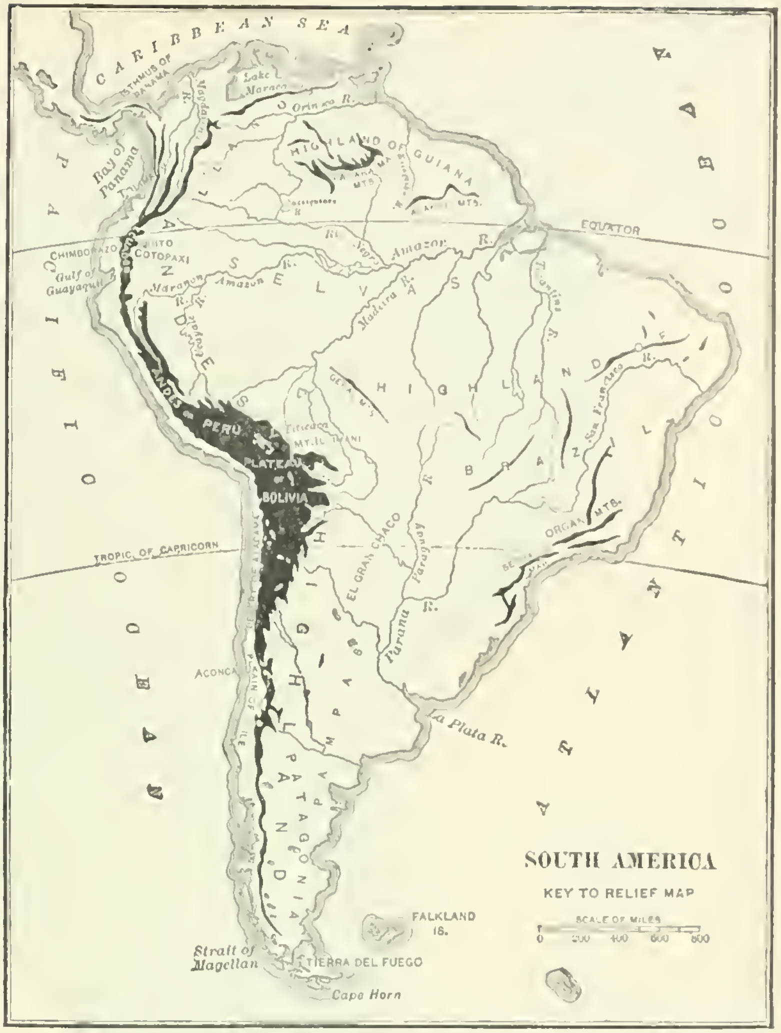
The great plains are broken on the north-east by the highland of Guiana, and on the south-east by the highland of Brazil. These are much lower than the Andes.

The north and middle parts of South America are in the trade wind belts and therefore have frequent rains wherever these winds rise over the mountains. The equatorial rain belt also shifts north and south across the northern half of the continent.

The southern part of the continent reaches far into the cool belt, in the path of the stormy westerly winds.

The warm equatorial currents of the Atlantic, moving westward under the trade winds, divide on the eastern point of South America and sweep along the north-east and south-east coasts.

2. Map Studies.



What oceans border on South America? Which part of the world ridge is in this continent? Along which coast does it extend?

In what direction is South America from North America? What isthmus unites these continents? What oceans lie east and west of both?

On which side of the equator is the greater part of South America? Over which part of this continent does the belt of equatorial rains shift north and south? Which part is in the belt of westerly winds?

In what direction does the Andes highland extend? Which coast does it follow? Which part of the highland looks the highest? The widest?

Compare the Andes highland and the Rocky Mountain highland as follows: Which is the higher? The longer? The wider? In what respects are they alike?

Where is the plateau of Bolivia? What lake is on this plateau?

Where is the highland of Brazil? Compare it with the Andes highland, in length; in width; in shape. Compare the Brazilian and Appalachian highlands in width and shape.

Where is the Guiana highland? Is it larger or smaller than the highland of Brazil?

On which side of the Andes is the great plain of South America? What highlands are on the northeast and the southeast?

Describe the course of the Amazon river. In which heat belt does the greater part of the Amazon basin lie?

Where is the La Plata river? Which river system drains the larger basin, the Amazon or the La Plata? To which river basin does the northwest slope of the Brazilian highland belong? The southwest slope? Which part of the central plain is drained by the Orinoco river? What highland partly separates the basin of the Orinoco from that of the Amazon?

Compare the central plains of North America and South America as follows: What large river system drains the southern part of each? The northern part? The north-central part?

Draw the general outline of South America,—using only three straight lines. State the general direction of each coast. Which is the longest?

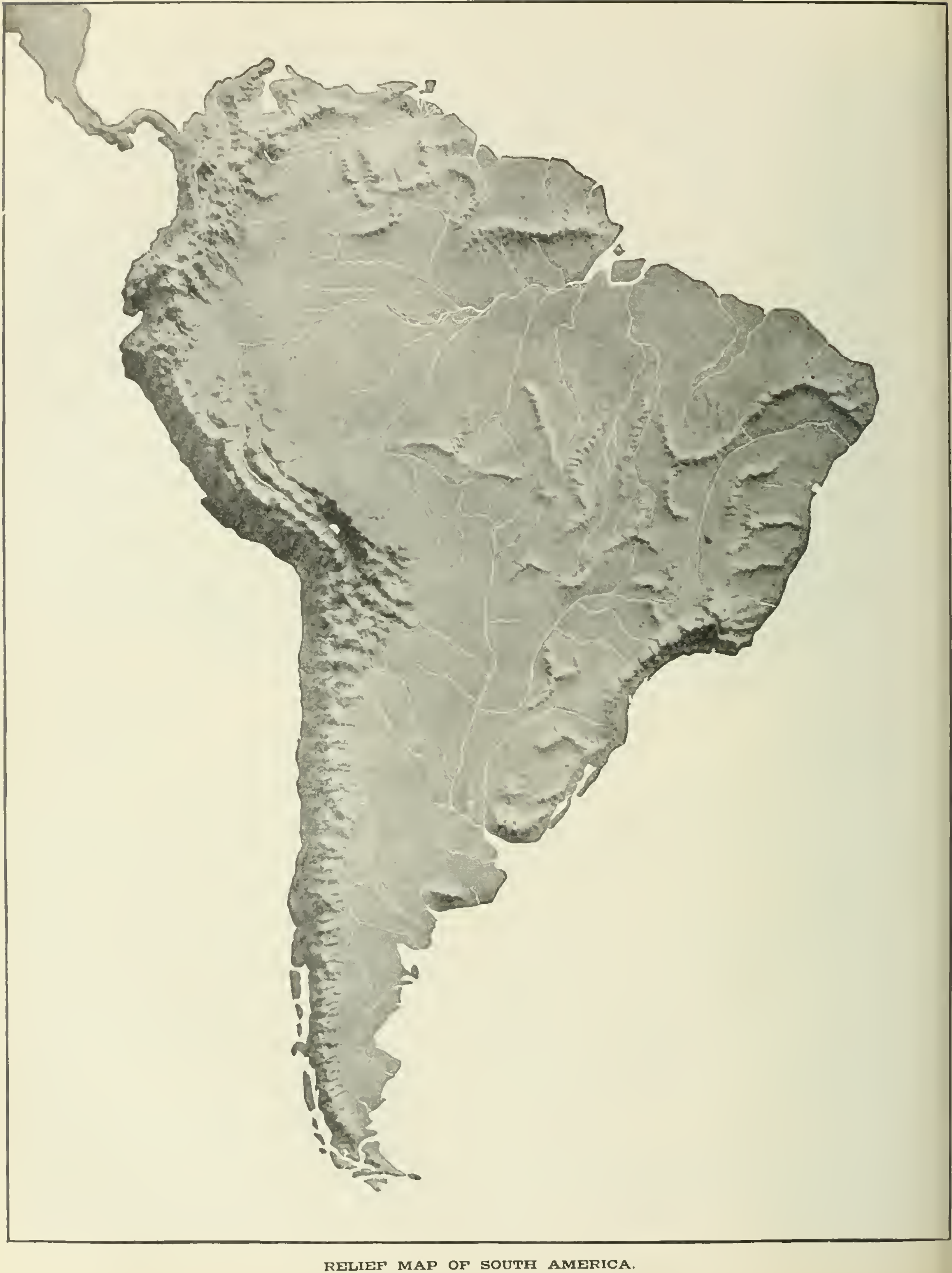
Sketch the Pacific coast of all America. Which is the more regular, the west coast of North America or that of South America?

Sketch the north coasts of both continents. Which of these coasts is the more irregular? Which is in the colder belt? Sketch the east coast of all America. Compare the two parts.

Where is the Caribbean sea? Name a river flowing northward into the sea. Where is the San Francisco river?

Make a list of the countries of South America with their capitals.

Why is the climate of Quito pleasant, although it is at the equator?



RELIEF MAP OF SOUTH AMERICA.

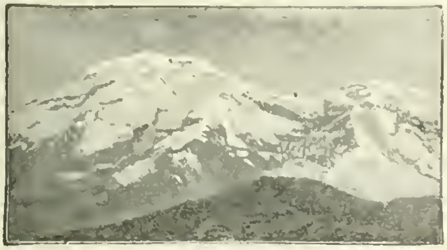
3. The Andes Highland.

The Andes highland consists of a great mountain system, with many long and high valleys between its ranges. This highland extends about one-fifth of the way around the earth.

The west slope of the Andes is short and in most parts steep. East of this highland lie broad plains. In the valley of the Amazon are the *selvas*, or *forest* plains. Other parts of the plains are grass lands.

The southern portion of the Andes has partly sunk beneath the sea. Many fine fiords now occupy deep valleys worn in the western slope. Ridges and peaks that the sea did not entirely cover, form a fringe of islands.

About half way between Cape Horn and the sharp bend in the Pacific coast, the Andes chain is very high. Some of the peaks are more than four miles above the sea level, and are white with snow all the year.


Chimborazo.

West of this part of the Andes lies the long and narrow plain of middle Chile. The land near the sea is rugged but not very high. The plain is between this rough coast land and the Andes.

The plateau of Bolivia lies in the widest part of the Andes. It is the highest plateau in America, and is shut in both on the east and west by lofty ranges. The plateau of Bolivia averages about 12,000 feet in height.

On the plateau of Bolivia there is a large sheet of water, known as *Lake Titicaca*.

Titicaca is the largest lake in South America, and is the loftiest large body of water in the New World.

City of Panama.

Although high, the plateau of Bolivia is too near the equator to be very cold. Corn and potatoes grow around the lake, and cattle, alpacas, and llamas graze there. The mountains yield much silver ore.

North-west of Bolivia the plateau is neither so wide nor quite so high. In the Andes of Peru, the ranges on the east are separated by long and deep valleys in which many rivers flow to the lowlands. The rains of the trade winds are very heavy on this eastern mountain slope, which is therefore covered with dense forests.

For more than a thousand miles along the west slope of the middle Andes, there is a region known as the *rainless coast*. The desert of *Atacama*, at the southern end of the rainless coast, merges into the fertile plain of middle Chile. This desert is at the northern end of the country of Chile.

Cape Horn.

In the northern part of the Andes are many high and wide valleys, walled in by mountain ranges. Some of these valleys are covered with coarse wash from the mountains and are dry and barren. Others are coated with fine soil, largely made of weathered volcanic ash. One of the most noted of these high valleys is that of Quito, a little less than two miles above sea level.

The valley of Quito is in the midst of the most noted group of volcanos in the world. There may be seen cones so old that their sides are cut by streams, and cones smooth with recent flows of lava and showers of ashes.

Some of the volcanoes are very active. Cotopaxi, about twice as high as the plain of Quito, is the loftiest *active* volcano known. The summit of this great cone is buried in snow, and is often hidden by clouds. Another famous peak is Chimborazo. This giant cone is higher than Cotopaxi, but is not active.

Many earthquakes occur in this volcanic region. For this reason most of the houses are built low and flat. They are made chiefly of sun-dried bricks. During one earthquake, about a century ago, forty thousand people are said to have been killed in Quito.

In the extreme north the Andes divide into three main ranges. The western range is not very high, and it ends near the isthmus of Panama. The middle chain runs almost due north. The eastern range curves for some distance along the northern coast.

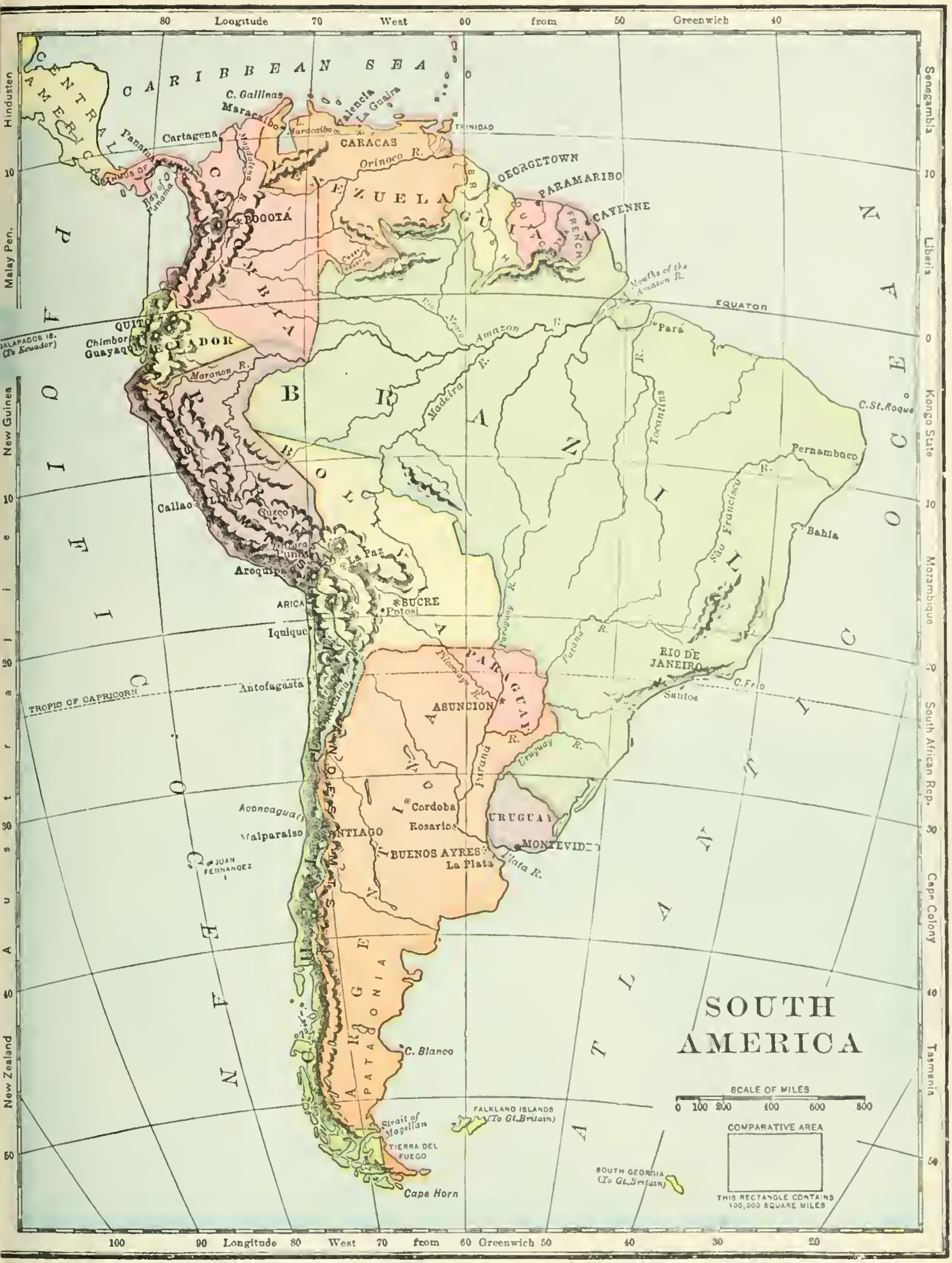
The Condor.

The long valleys east and west of the middle chain are drained by the Magdalena river and its branches. The Magdalena river is the chief waterway in Columbia, and is navigable for many miles from the sea.

4. The Highland of Brazil.

The highland of Brazil is shaped like a triangle, with one side lying along the east coast. The coastal part is the highest. As a whole, the highland of Brazil is only about one-sixth as high as that of the Andes, or about equal to the Appalachian highland.

Long rivers flow northward and southward from about the middle of the highland of Brazil. This part of the highland is a plateau, not yet deeply cut by streams. Farther north and south, deep and wide


SOUTH AMERICA
Longitude West from Greenwich
80
70
60
50
40
100
90
30
20
10
0
CARIBBEAN SEA
CENTRAL AMERICA
C. Gallinas
Maracaibo
L. Maracaibo
Valencia
La Guaira
TRINIDAD
Cartagena
Panama
Isthmus of Panama
Bay of Panama
CARACAS
Orinoco R.
VENEZUELA
GEORGETOWN
PARAMARIBO
CAYENNE
BRITISH GUIANA
DUTCH
FRENCH
Magdalena
BOGOTÁ
COLOMBIA
Mouths of the Amazon R.
EQUATOR
QUITO
Chimborazo
Guayaquil
ECUADOR
GALAPAGOS IS. (To Ecuador)
Maranon R.
Rio Negro
Amazon R.
Pará
Madeira R.
Tocantins R.
BRAZIL
C. St. Roque
Pernambuco
São Francisco R.
Bahia
PERU
LIMA
Callao
Cuzco
L. Titicaca
Puno
Arequipa
BOLIVIA
La Paz
ARICA
SUCRE
Potosi
Iquique
Antofagasta
TROPIC OF CAPRICORN
Paraguay R.
Parana R.
RIO DE JANEIRO
C. Frio
Santos
Pilcomayo R.
PARAGUAY
ASUNCION
Uruguay R.
URUGUAY
MONTEVIDEO
Plata R.
ARGENTINA
Cordoba
Rosario
BUENOS AYRES
La Plata
Aconcagua
Valparaiso
SANTIAGO
CHILE
ANDES MTS.
JUAN FERNANDEZ
PATAGONIA
C. Blanco
Strait of Magellan
TIERRA DEL FUEGO
Cape Horn
FALKLAND ISLANDS (To Gt. Britain)
SOUTH GEORGIA (To Gt. Britain)
PACIFIC OCEAN
ATLANTIC OCEAN
Australia
Hindustan
Malay Pen.
New Guinea
New Zealand
Senegambia
Liberia
Kongo State
Mozambique
South African Rep.
Cape Colony
Tasmania
SCALE OF MILES
0 100 200 400 600 800
COMPARATIVE AREA
THIS RECTANGLE CONTAINS 100,000 SQUARE MILES

valleys have been worn in the plateau, leaving long ridges between them. Rapids and falls abound in most of the streams and make them unfit for waterways.

The coast of this highland region is not broken by long bays. The best harbor is that of Rio Janiero. It is deep and broad, and ranks among the finest in the world. Rocky reefs help to form harbors in some places along the coast of Brazil.

Towards the coast dense forests cover large areas in this highland. In the inland region, where the rainfall is lighter than it is near the coast, there are wide grassy plains known as the *campos*. Herds of cattle graze on the campos.

Many useful plants are raised on the highland,—chiefly in the rainy eastern part. Among these are coffee, sugar cane, cotton and cassava.

Rio Janiero is the greatest coffee market in the world.

5. The Guiana Highland.

On the northeast the great plain of South America is broken by the Guiana highland.

SILVER MINE, BOLIVIA.

This highland is for the most part a much-worn plateau, with flat-topped hills and mountains rising in high cliffs from wide valleys. One of these table mountains, near the central part of the highland, rises about a mile and a half above sea level, but most of the peaks are not half so high.

This highland is reached by the equatoria rains and therefore has its wettest season dur ing the hot months. In all seasons the highes portions are well watered, for the trade wind give out rain as they rise over the highland.

On the north of the Guiana highland lies a woode coastal plain. Large swamps that extend along th shore are the home of many alligators. The slope passes so gently under the sea that at low tide wide tracts of sand and mud are laid bare.

Much of the south slope of the highland consists of rough hills and bare rocky valleys, for the winds from the se give their rains mostly to th northern slopes.

6. The Selvas.

The slopes east of the crest of th Andes are mainly in three great rive basins. The divides between thes basins cross the highlands of Brazi and Guiana, and the lowlands farthe inland.

The Amazon basin is between th other two. The highest parts of it long slope are in the Andes. The lowest pa are coastal swamps, more than two thousan miles east of the snowy peaks. The side slope descend from the highland of Brazil on th south, and that of Guiana on the north.

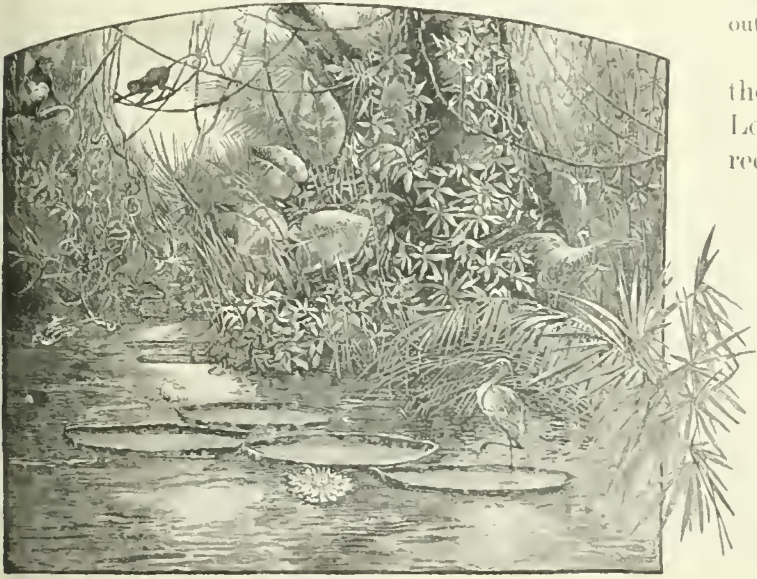
The Amazon basin is the largest in the worl It comprises about one-third of the continen

This basin is in the equatorial rain belt, an its rainfall is very heavy. The Amazon rive carries more water to the ocean than any othe river in the world. Its muddy water is see

Natives of the selvas.

at sea for a great distance from land. Some branches of the Amazon rise in the Andes, and the water which follows the winding bank down from these sources to the mouth flows about four thousand miles.

The main branches of the Amazon are the Madeira river on the south and the Negro river on the north. Large steamers go up the Amazon from the sea to the foothills of the Andes. For great distances many of the tributaries are deep, wide, and free from rapids. The length of navigable streams in the Amazon system is greater than the distance round the earth.



Scene on the Amazon.

Part of the wide mouth of the Amazon has so strong a tidal wave or bore, that small boats cannot outride it.

Dense forests, called *selvas*, cover the lowlands of the Amazon basin. Long vines hang from the trees, and reeds and rushes grow in the wet soil, forming a network so thick in some places that one cannot pass through without first cutting a path.

Tree ferns and palms in great variety grow in the selvas. Many beautiful birds live among the high tree tops.

Many small tribes of Indians live near the banks of the streams. These natives catch fish in the rivers, and animals in the forest.

Large rubber trees grow on the hot and

Pampas Grass.

damp banks of the Amazon. Deep cuts are made in the bark, and cups are placed beneath them to catch the milky juice which oozes out. When heated in certain kinds of smoke, this juice dries, thickens, and forms rubber of a fine quality.

The most splendid forests of rosewood, mahogany, and other expensive woods found in the world, are in the valleys of the Orinoco and the Amazon.

7. The Valley of the La Plata.

South of the Amazon basin lies the La Plata basin. It reaches from the crest of the Andes on the west to the crest of the coast range on the east.

This basin is about one-half as large as that of the Amazon. The main stream is the Parana river which flows into the broad La Plata river.

The lowland of the La Plata basin is a young plain in which the rivers have cut only narrow and shallow valleys. The northern part of this plain is called the *gran chaco*, or *great hunting ground.* South of the chaco the plain takes the name of *pampas*, meaning *fields.* The pampas extend also far south of the La Plata basin.

Deep rich soil covers large portions of the La Plata plain, and its grass feeds millions of cattle, sheep and horses. Much grain also is raised in this region. In some places there are clumps of tall coarse grass covered with soft plumes. This is known as *pampas grass.*

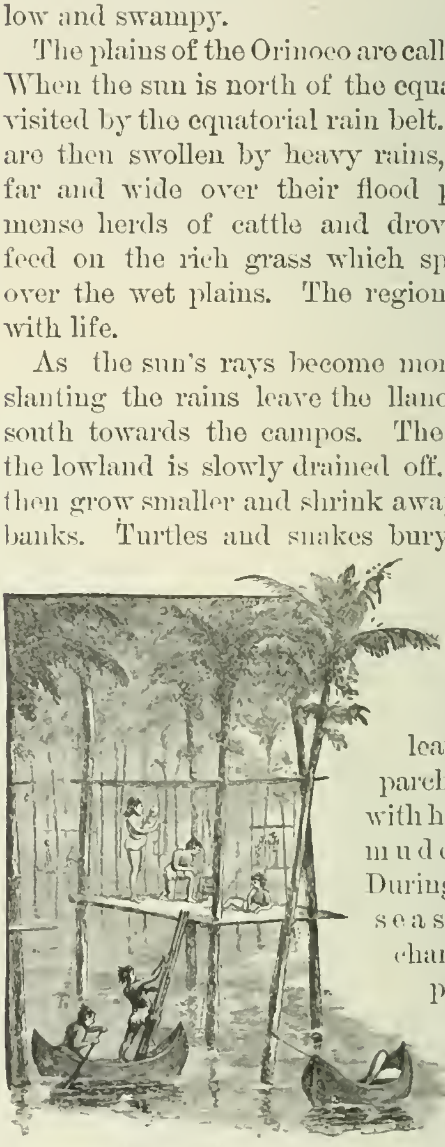
8. The Llanos.

The third large river basin in South America is that of the Orinoco. On the south it adjoins the basin of the Amazon. On the west and north the Andes form the boundary.

The lowland of this basin is a very young coastal plain. Its rivers flow in narrow valleys worn only a little below the level of the plain. The main river has made a large delta that is low and swampy.

The plains of the Orinoco are called the *llanos* When the sun is north of the equator they are visited by the equatorial rain belt. The rivers are then swollen by heavy rains, and spread far and wide over their flood plains. Immense herds of cattle and droves of sheep feed on the rich grass which springs up all over the wet plains. The region then teems with life.

As the sun's rays become more and more slanting the rains leave the llanos and move south towards the campos. The overflow in the lowland is slowly drained off. The rivers then grow smaller and shrink away from their banks. Turtles and snakes bury themselves in the mud. The smaller streams dry away, leaving only parched beds, with here and there muddy pools. During the dry season a great change takes place in the life on the plains. Hot trade winds scorch the grass and other plants. They die down to the roots



Tree Dwellers of the Orinoco.

nd thus await the return of the rains. The cattle and sheep move nto the flood plains, or are driven to the grass lands along the border foothills. The plain becomes almost a desert.

In some places it is difficult to trace the divides between the three great river basins of South America. The Orinoco river and Rio Negro tributary of the Amazon are connected by the Cassiquiari river. Tributaries of the Amazon and Paraguay rivers, navigable by canoes, are separated by only three miles of plain.

With the exception of a few rapids and the portage of three miles, a person might journey in a canoe from the delta of the Orinoco to the broad mouth of the La Plata.

9. Countries of South America.

The countries of South America are republics, except Guiana.

Brazil—This country is nearly as large as Europe. The selvas give many kinds of wood useful for dyeing, for cabinet work, and for ship-building. Coffee, cotton, tobacco, and India-rubber are the chief agricultural products; About half of all the coffee produced in the world is grown in Brazil. The country is also very rich in minerals. Quicksilver, copper, and diamonds are the principal minerals.

RIO JANIERO, the capital of this republic, is on a deep and spacious harbor sheltered by hills on all sides. This port is near the richest coffee districts in Brazil, and is the largest coffee market in the world.

Other exports from Rio Janiero are sugar, hides, tobacco, and diamonds.

The principal imports into Brazil, are cotton cloth and machinery.

BAHIA, a large port north-eastward from Rio Janiero, resembles the latter in its foreign trade.

PERNAMBUCO is the leading sugar port of Brazil.

PARA is on one of the wide distributaries of the Amazon. This city has a large rubber trade.

Other exports from the Amazon basin, mostly through Para, are cocoa, Brazil nuts, hides and Peruvian bark.

Argentine Republic—Five-sixths of Argentina consist of plains. The people of this republic are engaged chiefly in raising cattle, sheep, wheat, and Indian corn. In the production of wool, Argentina is is second only to Australia.

BUENOS AYRES, one of the principal ports of the continent, has a large foreign trade in hides, wool, mutton and wheat. The leading imports are cloth and railway materials.

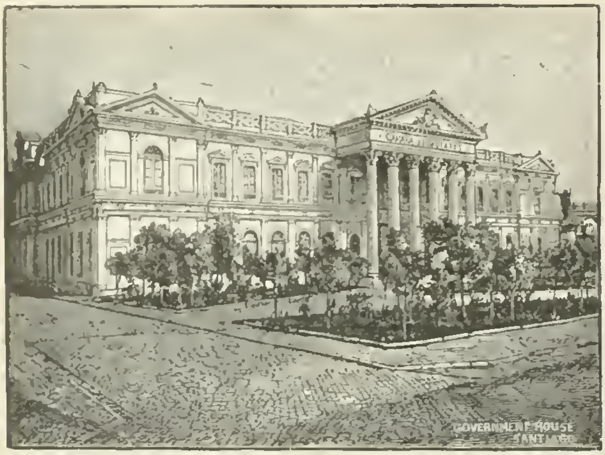
CORDOVA and LA PLATA are important trade centres. The former has a university and an academy of sciences.

Uruguay—This is the smallest country in South America. The people are mostly natives of mixed races. Wool and hides are the principal exports.

MONTEVIDEO is the capital and the largest port.

Paraguay—In this small republic the most valu-

A Square in Montevideo.



able product is Paraguay tea, or *yerba maté*. There are good grazing lands in this country. ASCUNCION, the capital, is the commercial centre.

Chile is a long, narrow country west of the Andes extending from the southern point of South America to Peru. The country is mountainous, with fertile valleys between the mountains. The people are enterprising. Their export trade is chiefly with Great Britain. This republic has great mineral wealth. Copper, silver and nitre are abundant in the northern half of Chile. Rich mines of coal are being worked in the southern half.

The principal farming products of Chile are wheat and wine grapes.

VALPARAISO is the chief port. Most of the imports,—such as cloth, cattle and sugar,—are received into this city.

SANTIAGO is the capital and largest city of Chile. Santiago is in a wide valley on the western slope of the Andes, more than one-third of a mile above sea level.

Bolivia—West of the Andes this country is chiefly desert. East of the Andes it is a great plain covered with trees. This inland country has rich mines of silver. Its rubber product is of the finest quality. It also produces sugar, spices, quinine, and alpaca wool.

Bolivia has no seaport, but many of its products are exported through Buenos Ayres, Arica (Chile), and other ports.

LA PAZ and SUCRE are the principal cities. Sucre is the capital. POTOSI is noted for its silver mines.

Peru—Sugar and cotton are raised in the flood plains of the small rivers of western Peru. Sheep and alpacas are reared in the highlands. Sugar, cotton and wool are the leading exports. Silver, Peruvian bark, nitre and guano are also exported. Cloth is the most valuable article of import.

LIMA is the largest city and capital of this country. CALLAO is one of the principal seaports of western South America.

Ecuador—The western part of Ecuador is mountainous. The eastern part is flat and very hot. Sugar, cotton, coffee and tropical fruits are produced in considerable quantities. The staple product of Ecuador is cocoa. This country, like all the others crossed by the Andes, has rich mineral deposits.

Ecuador is crossed by the equator. The lower part of the country is very hot. The high western part is pleasant and healthful.

QUITO is the capital. GUAYAQUIL is the largest city.

Colombia—The leading exports of this country are coffee, cocoa, mahogany, rubber and sugar.

BOGOTA, the capital, is over a mile and a half above the sea level.

PANAMA, formerly a department of Colombia, asserte its independence in 1903. To prevent incessant civi wars, its former curse, the new state was recognized by the United States and chief European Powers.

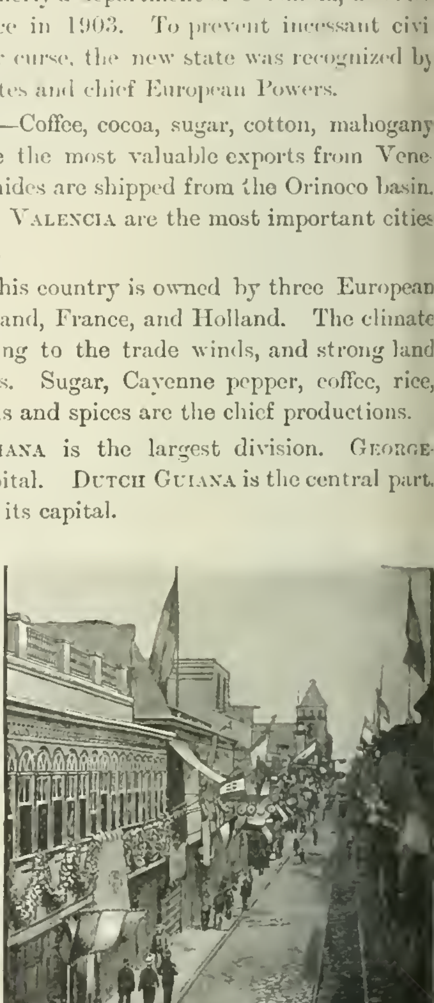
Venezuela—Coffee, cocoa, sugar, cotton, mahogany and rubber are the most valuable exports from Venezuela. Many hides are shipped from the Orinoco basin.

CARACAS and VALENCIA are the most important cities of this country.

Guiana—This country is owned by three European countries, England, France, and Holland. The climate is pleasant, owing to the trade winds, and strong land and sea breezes. Sugar, Cayenne pepper, coffee, rice, medicinal plants and spices are the chief productions.

BRITISH GUIANA is the largest division. GEORGETOWN is the capital. DUTCH GUIANA is the central part. PARAMARIBO is its capital.

FRENCH GUIANA is the eastern part of the country. Its capital is CAYENNE, after which Cayenne pepper is named. It is situated on an island with the same name. The French use this colony as a penal settlement.



EUROPE.

1. Europe is a little larger in size than the ominion of Canada. This continent forms he western part of Eurasia.

Europe may be divided into three regions,—ountainous highlands in he southwest, lower highnds in the northwest, with wlands between the highland regions, and also spreading far o the north-east. Many peninsulas and seas nake the coast of Europe more irregular than hat of any other continent.

Almost the whole of this continent is in the ool belt. Only the southern peninsulas proect into the warm belt.

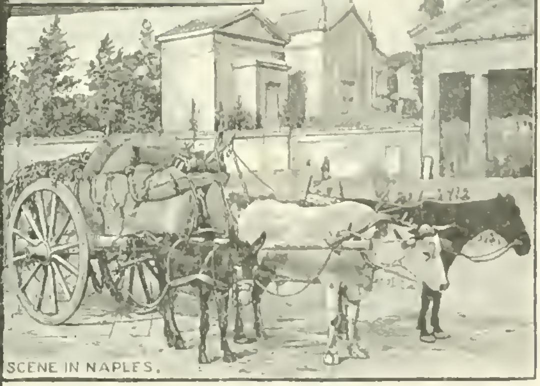
Europe is in the path of the westerly winds. The west coast, therefore, receives the heaviest rainfall, but a fair amount of rain falls in the interior, though becoming less and less as the farther inland regions are reached. The rainfall around the Caspian sea is light.

Owing largely to the winds from over the drift of the Gulf stream, the western part of Europe has a much milder climate than the Atlantic and Arctic coasts of America at the same distance from the equator.

The many seas which border on Europe help to give much of it an even climate; but the great plain in eastern Europe is far away from the Atlantic ocean, and therefore has hot summers and cold winters.

ALPS

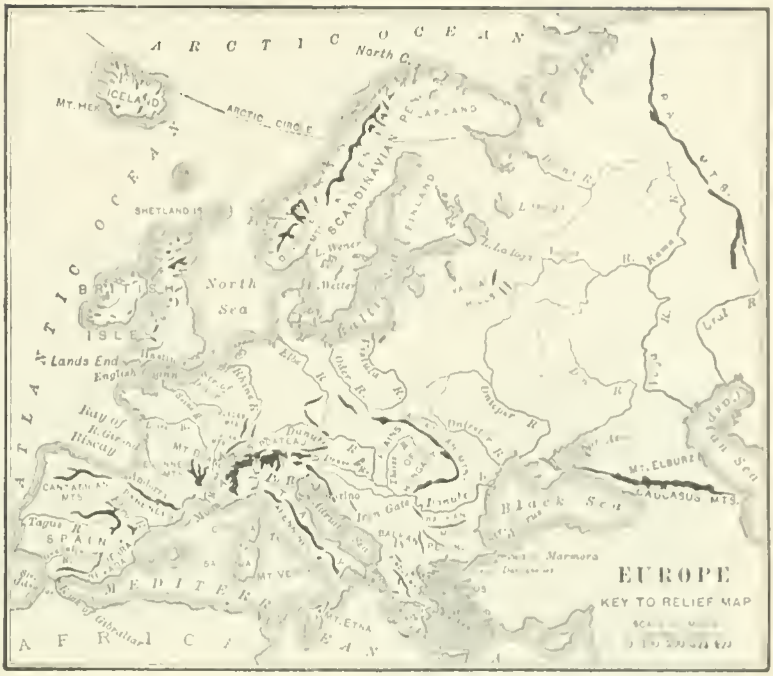
GLACIER


SCENE IN NAPLES.

2. Map Studies.

Which is the larger,—North America or Europe? What oceans lie between these continents?

What seas and mountains bound Europe on the south? What mountains, river, and sea, separate the



northern plain of Eurasia into two parts,—one in Asia and the other in Europe? Which of these parts is the larger?

Which half of Europe consists largely of highlands? Of plains? What countries are partly bounded by the Pyrenees? By the Caucasus and Ural mountains? By the Alps? By the Kiolen mountains? By the Carpathian mountains.

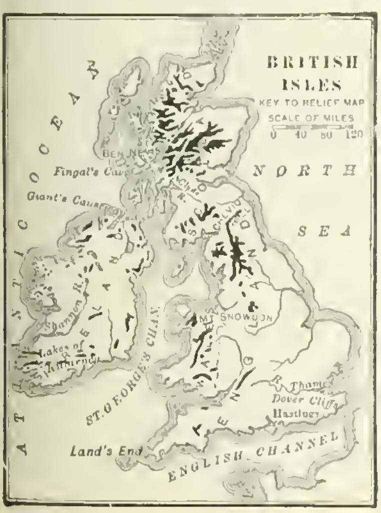
What countries border on the North sea? Baltic sea? Gulf of Bothnia? Bay of Biscay? Adriatic sea? Ægean sea? What great seas partly bound Russia? Where is the Irish sea? The strait of Dover? The strait of Gibraltar?

Where does the Volga river rise? Describe its course. Into what sea does it flow? In what general direction does the Danube river flow and into what sea? Where is the Seine river? The Thames? The Po? The Dnieper? The Rhine? The Rhone? The Elbe. *See map of Central Europe, page 167.*

Which heat belts cross Europe? In which of these belts is the broad middle part of the continent? What portion of Europe is in the warm belt? In which belt of winds does Europe lie? *See maps on pages 15, 23 and 24.*

Where are the Alps? In what general direction does the highland of south-western Europe extend? Compare it with the Rocky Mountain Island,—in trend,—in length,—in breadth. *See globe map, page 4.*

Where are the Valdai hills? Name two rivers flowing into the Caspian sea. Describe the course of the Dwina river. Which one of these rivers flows in the coldest region?



Draw the general shape of Europe,—using three or four straight lines. Sketch each coast. Which has the more regular coast line,—North America or Europe?

Make a list of the countries and capitals.

Name five large bodies of water that partly surround the Scandinavian peninsula.

What sea is east of England and Scotland?

What three continents surround the Mediterranean sea?

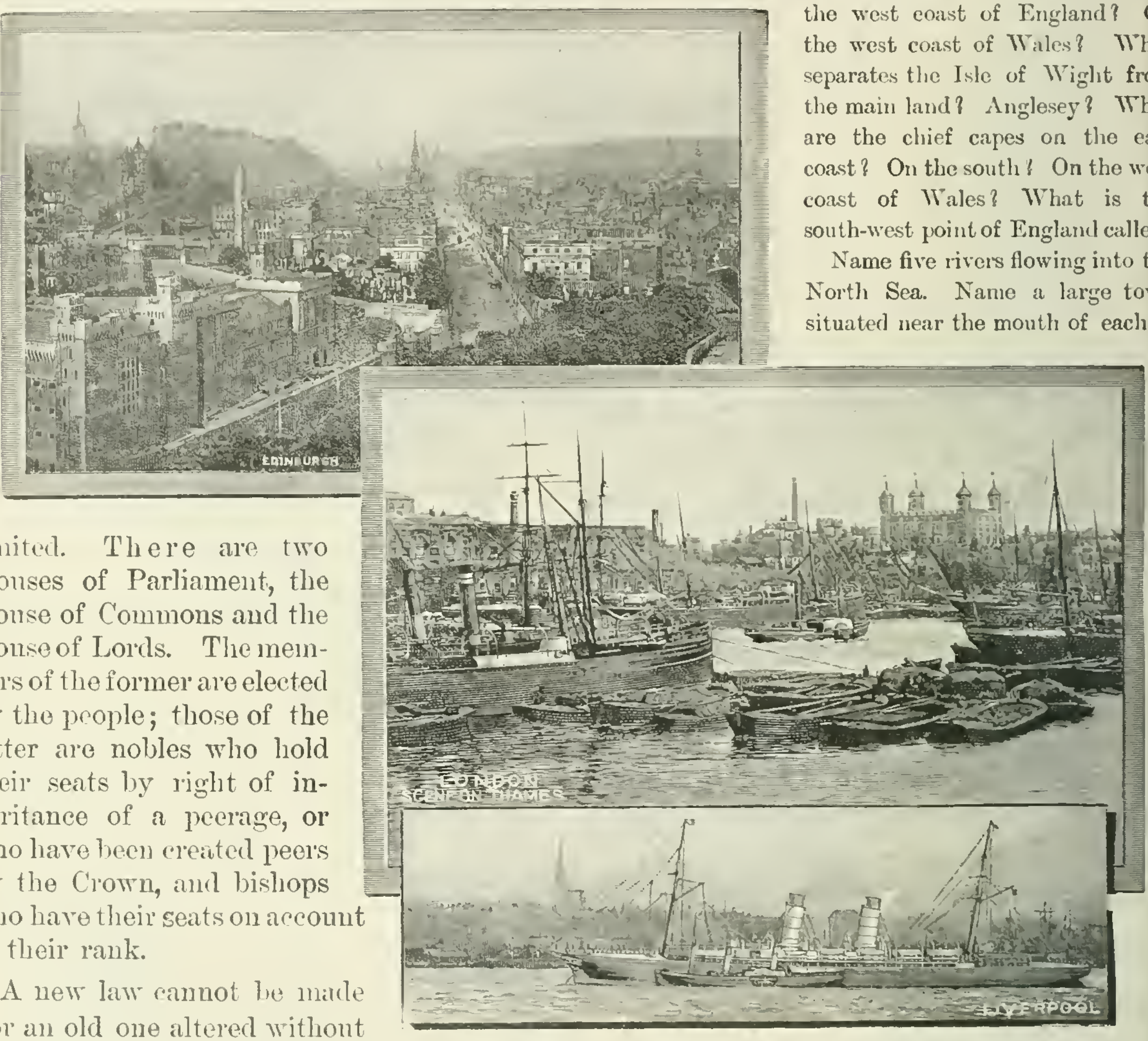
3. The British Isles.

Two large islands and about 5,000 smaller ones form the group known as the British Isles. The largest of these is Great Britain, the most important island in the world: yet it is only one-fortieth as large as Canada. It is 600 miles long and from 32 to 360 miles wide; its area is 88,094 sq. miles. Ireland is second in size among the British Isles. It is 300 miles long and 175 miles in greatest width. Its area is 32,583 sq. miles.

These famous islands are at about the same distance as the Labrador peninsula from the equator, but they enjoy a mild climate and equable seasons, while the peninsula has a low temperature with very severe seasons. The prevailing south-west winds are tempered by the heat from the waters of the North Atlantic

Ocean and so warm the British Isles and the adjacent countries of Europe.

The government of these islands is a limited monarchy consisting of the Sovereign, Lords, and Commons. The sovereign holds office by right of birth, but his authority is limited. There are two Houses of Parliament, the House of Commons and the House of Lords. The members of the former are elected by the people; those of the latter are nobles who hold their seats by right of inheritance of a peerage, or who have been created peers by the Crown, and bishops who have their seats on account of their rank.



A new law cannot be made nor an old one altered without the consent of the Sovereign and both Houses of Parliament. The carrying out of the laws is in the hands of a Prime Minister assisted by a *Cabinet*. The members of the Cabinet supervise foreign affairs, the treasury, the army, the navy, and the other departments.

ENGLAND AND WALES.

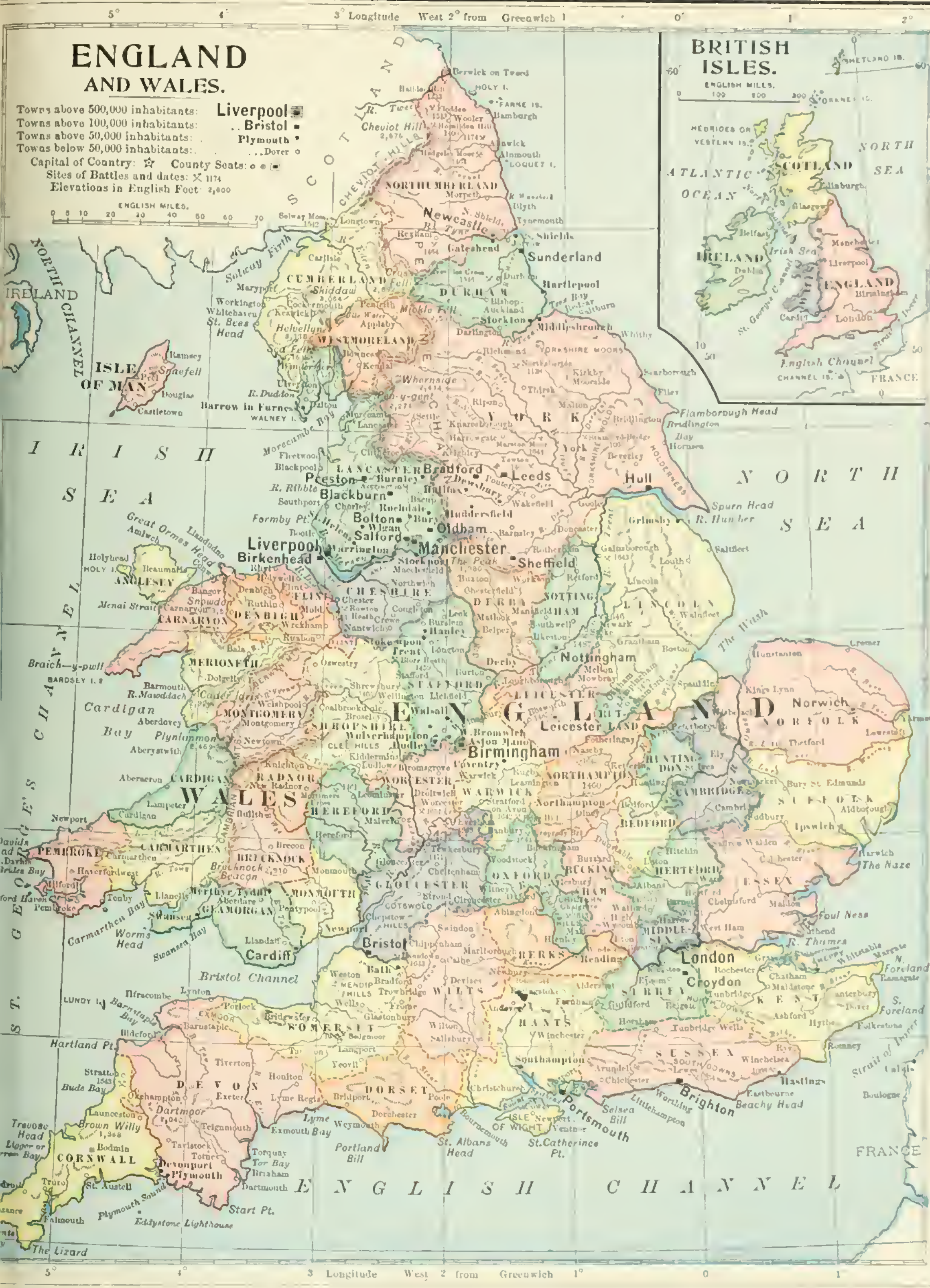
Map Studies.

Give the boundaries of England; of Wales. What country lies to the north-west of England? What strait and channel separates England from France?

What are the chief inlets on the east coast of England? On the south coast? On the west coast of England? On the west coast of Wales? What separates the Isle of Wight from the main land? Anglesey? What are the chief capes on the east coast? On the south? On the west coast of Wales? What is the south-west point of England called?

Name five rivers flowing into the North Sea. Name a large town situated near the mouth of each of these rivers. What rivers flow into the English Channel from England? Compare the lengths of the rivers flowing into the North Sea and the English Channel.

Name four rivers flowing into Bristol Channel. What are the two largest rivers flowing into the Irish Sea from England?


ENGLAND
AND WALES.
Towns above 500,000 inhabitants: Liverpool
Towns above 100,000 inhabitants: ..Bristol
Towns above 50,000 inhabitants: Plymouth
Towns below 50,000 inhabitants: ...Dover
Capital of Country: ☆ County Seats:
Sites of Battles and dates: ✕ 1174
Elevations in English Feet: 2,600
ENGLISH MILES.
0 5 10 20 30 40 50 60 70
3° Longitude West 2° from Greenwich 1
5°
4°
0°
1
2°
BRITISH
ISLES.
ENGLISH MILES.
0 100 200 300
SHETLAND IS.
ORKNEY IS.
HEBRIDES OR WESTERN IS.
NORTH SEA
ATLANTIC OCEAN
SCOTLAND
Edinburgh
Glasgow
Belfast
IRELAND
Dublin
Irish Sea
Manchester
Liverpool
ENGLAND
Birmingham
Cardiff
London
St. George's Channel
English Channel
CHANNEL IS.
FRANCE
SCOTLAND
CHEVIOT HILLS
Cheviot Hill 2,676
Berwick on Tweed
HOLY I.
FARNE IS.
Bamburgh
R. Tweed
Wooler
Alnwick
Alnmouth
COQUET I.
NORTHUMBERLAND
Morpeth
Blyth
Newcastle
N. Shields
Tynemouth
S. Shields
Sunderland
Hexham
Gateshead
Solway Firth
Solway Moss 1542
Longtown
Carlisle
Maryport
CUMBERLAND
Skiddaw 3,054
Cross Fell 2,892
Durham
DURHAM
Hartlepool
Workington
Whitehaven
St. Bees Head
Cockermouth
Keswick
Penrith
Ulls Water
Helvellyn 3,118
Appleby
Mickle Fell
Bishop Auckland
Stockton
Middlesbrough
Tees Bay
Redcar
Saltburn
Darlington
Whitby
WESTMORELAND
Kendal
Richmond
YORKSHIRE MOORS
Northallerton
Scarborough
Kirkby Moorside
Filey
ISLE OF MAN
Ramsey
Snaefell
Douglas
Castletown
R. Duddon
Barrow in Furness
WALNEY I.
Ulverston
Dalton
Whernside 2,414
Pen-y-gent 2,273
Thirsk
Ripon
Malton
Morecambe Bay
Lancaster
Settle
Knaresborough
YORK
Bridlington
Flamborough Head
Bridlington Bay
Harrogate
Marston Moor 1644
York
Hornsea
Fleetwood
Blackpool
LANCASTER
Clitheroe
Bradford
Leeds
Beverley
HOLDERNESS
Preston
Burnley
Hull
R. Ribble
Blackburn
Halifax
Dewsbury
Pontefract
Wakefield
Goole
Southport
Chorley
Rochdale
Huddersfield
Bolton
Bury
Oldham
Formby Pt.
St. Helens
Wigan
Salford
Barnsley
Bootle
Liverpool
Warrington
Manchester
Doncaster
Grimsby
Spurn Head
R. Humber
Birkenhead
Stockport
Macclesfield
The Peak 2,080
Sheffield
Rotherham
Gainsborough
Louth
Saltfleet
NORTH SEA
IRISH SEA
IRELAND
NORTH CHANNEL
Great Ormes Head
Llandudno
Holyhead
HOLY I.
Amlwch
Beaumaris
ANGLESEY
Menai Strait
Bangor
Snowdon
Carnarvon
CARNARVON
Conway
Rhyl
Holywell
Flint
FLINT
Denbigh
Ruthin
DENBIGH
Mold
Chester
CHESHIRE
Northwich
Rowton Heath
Crewe
Nantwich
Wrexham
Buxton
Chesterfield
DERBY
Worksop
Retford
NOTTINGHAM
Lincoln
LINCOLN
Wainfleet
Congleton
Leek
Burslem
Hanley
Matlock
Belper
Mansfield
Southwell
Newark
Ilkeston
Grantham
Boston
The Wash
Cromer
Hunstanton
Braich-y-pwll
BARDSEY I.
Bala
Ruabon
Stoke upon Trent
Longton
Derby
Nottingham
MERIONETH
Dolgelly
Barmouth
R. Mawddach
Cader Idris
Oswestry
Blore Heath 1459
Stafford
STAFFORD
Burton
Melton Mowbray
Spalding
King's Lynn
Norwich
NORFOLK
Yarmouth
Lowestoft
Thetford
Cardigan Bay
Aberdovey
Welshpool
MONTGOMERY
Montgomery
Shrewsbury
Wellington
Lichfield
Coalbrookdale
Broseley
SHROPSHIRE
Walsall
W. Bromwich
Aston Manor
Birmingham
Wolverhampton
Dudley
Leicester
LEICESTER
RUTLAND
Peterborough
Ely
ENGLAND
Plynlimmon 2,469
Aberystwith
Newtown
CLEE HILLS
Kidderminster
Ludlow
Bromsgrove
Coventry
Warwick
Rugby
Leamington
Naseby
Kettering
NORTHAMPTON
HUNTINGDON
Newmarket
Bury St. Edmunds
SUFFOLK
Aldborough
Aberaeron
CARDIGAN
Knighton
RADNOR
New Radnor
WALES
Lampeter
Cardigan
Builth
WORCESTER
Worcester
Droitwich
WARWICK
Stratford on Avon
Northampton
Olney
CAMBRIDGE
Cambridge
Sudbury
Ipswich
Newport
HEREFORD
Hereford
Malvern
Banbury
BEDFORD
Bedford
Saffron Walden
Colchester
Harwich
The Naze
St. Davids Head
St. Brides Bay
Milford
Milford Haven
Pembroke
PEMBROKE
Haverfordwest
Carmarthen
CARMARTHEN
Brecon
BRECKNOCK
Brecknock Beacon 2,910
Tenby
Llanelly
Merthyr Tydfil
Aberdare
Monmouth
MONMOUTH
Pontypool
GLAMORGAN
Swansea
Carmarthen Bay
Worms Head
Swansea Bay
Llandaff
Cardiff
Newport
Tewkesbury
Gloucester
GLOUCESTER
Cheltenham
Stroud
Cirencester
COTSWOLD HILLS
Chepstow
Woodstock
OXFORD
Witney
Abingdon
Aylesbury
BUCKINGHAM
CHILTERN HILLS
Hitchin
Luton
HERTFORD
Hertford
St. Albans
Watford
ESSEX
Chelmsford
Maldon
Foul Ness
MIDDLESEX
West Ham
Southend
R. Thames
Bristol
Chippenham
Swindon
Marlborough
BERKS
Reading
Henley
London
Croydon
Gravesend
Rochester
Chatham
Maidstone
Whitstable
Margate
N. Foreland
Ramsgate
Canterbury
Bristol Channel
Weston
MENDIP HILLS
Bath
Bradford
Trowbridge
Devizes
WILTS
Newbury
Aldershot
Guildford
SURREY
KENT
Tunbridge
Ashford
S. Foreland
Dover
Deal
Folkestone
Hythe
Romney
LUNDY I.
Barnstaple Bay
Ilfracombe
Lynton
EXMOOR
Porlock
Bridgewater
Wells
Frome
Glastonbury
SOMERSET
Sedgemoor
Wilton
Salisbury
Andover
HANTS
Winchester
Farnham
Horsham
Tunbridge Wells
Hastings
Rye
Winchelsea
Barnstaple
Bideford
Hartland Pt.
Stratton 1643
Bude Bay
Tiverton
Taunton
Langport
Yeovil
Honiton
DEVON
Exeter
Okehampton
Dartmoor 2,040
Lyme Regis
Bridport
DORSET
Dorchester
Poole
Christchurch
Southampton
Arundel
Chichester
Selsea Bill
SUSSEX
SOUTH DOWNS
Lewes
Brighton
Worthing
Littlehampton
Eastbourne
Beachy Head
Strait of Dover
Calais
Boulogne
Launceston
Brown Willy 1,368
Bodmin
CORNWALL
Trevose Head
Tavistock
Teignmouth
Totnes
Torquay
Tor Bay
Brixham
Dartmouth
Devonport
Plymouth
Exmouth Bay
Lyme Bay
Weymouth
Portland Bill
Bournemouth
St. Albans Head
ISLE OF WIGHT
Newport
Ventnor
St. Catherines Pt.
Portsmouth
Truro
St. Austell
Falmouth
Plymouth Sound
Eddystone Lighthouse
Start Pt.
The Lizard
ENGLISH CHANNEL
ST. GEORGE'S CHANNEL
FRANCE
3 Longitude West 2 from Greenwich 1°
50
51
52
53
54
55

On what river is Bristol situated? Hull? Newcastle? Liverpool? London? Greenwich?

Chalk Cliffs, Dover, England.

What counties border on the English Channel? On Scotland? On Wales? On the North Sea? On the Irish Sea?

What counties of Wales have a sea coast? Name the inland counties of Wales; of England.

In what county is Liverpool? Birmingham? Hull? York? Newcastle on Tyne? Leeds? Portsmouth? Plymouth? Sheffield? Manchester? Birkenhead? Bristol? Brighton? Dover? Oxford? Cambridge?

London Bridge.

The mountains in England and Wales are little more than high hills. They lie chiefly in the west. The following are the chief elevations:—

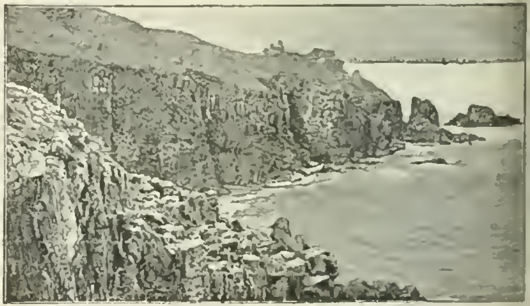
1. The Highlands of Devon and Cornwall.—These form three subdivisions: (1) Exmoor, a tableland in Devonshire and Somerset; (2) Dartmoor, a tableland with granite hills having mines of tin, copper and lead, and quarries of building stone; (3) the Cornish Heights, consisting of granite hills and moorlands; these yield lead, copper, tin, zinc, granite, and China clay.
2. The Cambrian Group of Mountains.—These occupy the greater part of Wales. Snowdon (3,571 ft.) is the highest mountain in England and Wales. Valuable slate quarries are worked in the northern part of Wales.
3. The Cumbrian Mountains.—These are found in Cumberland, Westmoreland, and the northern part of Lancashire.
4. The Pennine Chain.—This consists of hills and moorlands from 1,000 ft. to 2,000 ft. high, extending from Derbyshire to the Cheviot Hills.
5. The Cheviot Hills.—These are on the border
tween England and Scotland, and belong mor
Scotland than to England.

The middle and south-east parts of Engl
form a rich farming and grazing lowland,
it cannot raise enough grain and cattle to f
the millions of people who live in this co
try. Wheat, corn, beef, and apples are i
ported from Canada and other countr
Shiploads of cotton from the Southern Sta
are sent to the English mills. In return, ma
kinds of cloth and manufactured goods
exported from England.

The main water-parting lies along the P
nine mountains, crosses the central plain
low hills till it me
the southern div
in Gloucestershi
Thus it resemble
T inverted: thus
These two wat
partings divide
rivers into three s
tems:

1. The rivers which dr
the eastern side
the central wa
parting and flow
to the North
The eastern slop
broad and gradual; hence its rivers are slow
navigable.

The most important are the *Tyne*, *Tees*, *O*
and *Trent* forming the *Humber*, *Great Ouse*,
Thames.



Land's End, England.

2. The rivers which drain the western side of the central water-parting and flow into the Irish Sea and St. George's Channel.

These rivers are short and rapid, except the Severn, which is the longest river in England. The most important are the *Severn*, *Wye*, and the Bristol *Avon*; the *Mersey*, *Ribble*, and *Eden*.

3. The rivers which drain the southern side of the southern water-parting and flow into the English Channel.

These are short, shallow, and of little value to commerce.

LAKES.— The lakes of England lie chiefly in he "Lake District," a mountainous region in umberland and Westmoreland. From the entre of the umbrian roup, Helvelyn, they radiate ike the spokes f a wheel in all irections. The argest is Winermere, 14 iles long and mile wide.

Others are Ulleswater, Thirlmere, erwentwater, uttermere, Wast vater, Coniston vater, Grasmere, and Rydal water.

Tower Bridge, London.

COAST FEATURES.—England has a very exensive coast line. From Berwick round the oast to the head of Solway Firth in a straight ine from headland to headland, is about 1,000 iles, but so deeply is the coast indented that he total length of coast-line is about 2,400 iles.

EAST COAST.—The east coast is in general w; in some places embankments are necesary to prevent inroads of the sea.

The chief openings are the mouth of the Tees, the umber, the Wash, and the estuary of the Thames.

The chief capes are Flamborough Head (160 ft.), Spurn Head, the Naze, North Foreland (184 ft.) and South Foreland (375 ft.).

The only islands are Holy Isle and Farne Islands, off the Northumberland coast. Sheppy and Thanet, on the coast of Kent, once islands, are so no longer.

SOUTH COAST.—The part of the coast east of the Isle of Wight is a low clay shore with here and there chalk cliffs; the part to the west is high and precipitous, indented by numerous deep cuts which form safe harbors.

The chief inlets are Portsmouth Harbor, Southampton Harbor, Poole Harbor, Weymouth Bay, Plymouth Sound, Falmouth Harbor, and Mount's Bay.

The chief capes are Beachy Head (564 ft.), Selsea Bill, St. Catharine's Point and the Needles on the Isle of Wight, St. Alban's Head, Portland Bill, Start Point, the Lizard, and Land's End.

The Isle of Wight is 22 miles long and 13 miles wide. The Channel Islands, which lie close to the coast of France and geographically belong to France, have been a portion of the Kingdom of England since the Norman conquest. The chief are Alderney, Guernsey, Jersey, and Sark.

THE WEST COAST.—The west coast is in general bold, mountainous, and rocky. It is broken up by large openings.

The chief inlets are the Solway Firth; Morecambe Bay; the mouths of the Ribble, Mersey, and Dee; Cardigan Bay; Milford Haven; Carmarthen Bay; and Bristol Channel.

The chief capes are St. Bees Head, Great Orme's Head, Braich-y-pwll, St. David's Head, Worms Head, and Hartland Head.

The chief islands off the west coast are the Isle of

Man; Anglesea; the Scilly Isles, a group of 145 islets, which send flowers and vegetables to London.

Industries.—England is a manufacturing and commercial country. Agriculture has been gradually giving place to trade and manufactures. This is owing to the development of the coal mines and the application of coal to the production of steam power.

Hastings, England.

The three staple manufactures are those in which cotton, iron, and wool are the raw materials.

The cotton-manufacture is the most valuable, and is situated mainly upon the coal field in south-east Lancashire. This is a region of cheap coal and iron. The climate is moist, a condition essential for the spinning and weaving of cotton. The raw material is readily obtained through the seaport of Liverpool. Manchester is the centre of this industry. Other towns engaged in its manufacture are Salford, Oldham, Bolton, Blackburn, Preston, and many more.

Nottingham, which manufactures cotton hosiery, machine-made net and lace, is the only other town at a distance from the "Cotton Capital," Manchester, engaged in making cotton goods.

The raw cotton is obtained chiefly from the United States, Egypt, and India.

England is noted for the smelting of iron, the manufacture of steel, and the making of iron and steel goods, as machinery, cutlery, and hardware.

The abundance of iron ore, coal, and limestone in the region of the great coal fields causes iron-smelting to be carried on chiefl in these regions. Iron and steel goods ar manufactured mainly in two districts:—(1 In the "Black Country," situated in Sout Staffordshire, and the adjacent parts of Warwickshire and Worcestershire, with Birmingham for the centre; (2) In South Yorkshir the centre of the manufacture being Sheffield noted for it making of cutlery.

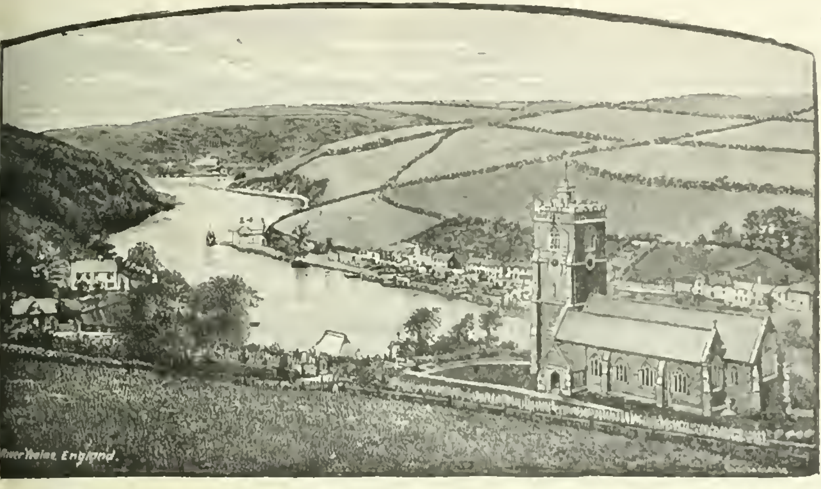
The West Riding of Yorkshir has long bee the chief seat o the woollen industry. Th principal centre of this manufacture are Leed and Bradford Other towns engaged in it are Halifax, Huddersfield, Dewsbury, Wakefield, &c.

The raw wool is obtained chiefly from Aus tralia and South Africa.

Other Important Manufactures.—

1. The making of earthenware and porcelain. Th centre is the district called the Potteries, in Nort Staffordshire.
2. The silk industry. This is carried on at Derby Coventry, Macclesfield and other places.
3. Glassware is manufactured at St. Helens, Birmingham, Stourbridge, and Smethwick.
4. Paper is made in districts where there is a goo supply of pure water, in Kent, Derbyshire, an Lancashire.
5. Chemicals are made at many places, as Newcastle Swansea, Jarrow, Widnes, St. Helens, &c.
6. Sugar refining is carried on at London and Liverpool.

Commerce.—The foreign commerce of England and Wales is of greater value than tha of any other country. The imports consis mainly of food and raw materials. The six chief articles imported are grain, raw cotton, wool, sugar, metals, and timber. These are mainly brought from the British possessions, the United States, and the adjacent European countries. The exports consist chiefly of coal and manufactured goods, as cottons, woollens, and articles of iron and steel.


iver Yealm, England.

Among the chief causes that have made England and Wales the greatest trading country in the world are the following:—

1. A favorable climate.
2. The abundance of raw material, such as coal and iron.
3. Its geographical position, being near the centre of the land surface of the earth.
4. The abundance of natural harbors and large number of navigable rivers, together with the nearness of all parts to the coast.
5. The great number and extent of the colonies.

The chief seaports are London, Liverpool, Cardiff, Newcastle, Hull, North and South Shields, Southampton, Sunderland, Swansea, and Bristol.

London controls most of the British trade with India, Australia, and the mainland of Europe; also a large part of the trade with tropical America. From China and India this great port receives tea, silk, sugar, coffee, spices, indigo and other products of south-eastern Asia. Greece sends currants; Italy and Spain, olive oil and wine.

From the Baltic ports lumber, wheat, cattle, and wool reach London; from tropical America sugar, coffee, hides, rubber, and cocoa. Australia ships wool, gold, and frozen meat; Canada, live stock, grain, and dairy products.

Liverpool is the second English seaport, and the centre of the American trade. Canada and the United States send more products to Liverpool than to any other part of the world. Most valuable among these are cotton, grain, and meats. Large quantities of wool from Argentina and Australia are also received at Liverpool.

The exports of Liverpool are chiefly cloth, manufactured from wool, cotton, or silk; cutlery and other kinds of hardware; heavy iron goods, as engines, rails, and armor-plates.

The rise and fall of the tide in the Mersey at Liverpool is so great that many steamers enter enclosed docks to load and unload. In these docks the water can always be kept at the same level. Other steamers use great landing stages that float, and thus rise and fall with the tide. It is connected with its suburb, Birkenhead, by a tunnel under the river.

Cardiff is the third British seaport. It exports coal and iron, and imports timber and ores.

Hull has a large Baltic trade, and is the fourth English seaport.

Newcastle exports coal, builds ships, and has manufactures of engines, fire-arms, and chemicals.

North and South Shields, at the mouth of the Tyne, exports coal.

Southampton, the chief seaport in the south of England, is a large port for passenger steamers to all parts of the world.

Sunderland, at the mouth of the Wear, exports coal and has large shipbuilding yards.

Swansea exports coal and is the great seat of the copper-smelting industry. Great quantities of copper ore are imported and the metallic copper is exported.

Bristol's trade is chiefly with Ireland, the West Indies, and South America.

England is divided for local government into forty, and Wales into twelve shires or counties.

The Counties are as follows:—

1. *The six northern*—Northumberland, Durham, York, Cumberland, Westmoreland, Lancaster.
2. *The five eastern*—Lincoln, Cambridge, Norfolk, Suffolk, Essex.
3. *The fourteen midland*—Stafford, Derby, Nottingham, Worcester, Leicester, Rutland, Warwick, Northampton, Huntingdon, Oxford, Buckingham, Bedford, Hertford, Middlesex.
4. *The five western*—Cheshire, Shropshire, Herefordshire, Monmouth, Gloucester.
5. *The five south-eastern*—Kent, Surrey, Sussex, Berkshire, Hampshire.
6. *The five south-western*—Wilts, Dorset, Somerset, Devon, Cornwall.
7. *The six counties of North Wales*—Anglesea, Carnarvon, Denbigh, Flint, Montgomery, and Merionth.
8. *The six counties of South Wales*—Cardigan, Radnor, Pembroke, Carmarthen, Brecknock, and Glamorgan.

Edinburgh Castle, Scotland.

SCOTLAND.

Map Studies.

How is Scotland separated from England? Give the boundaries of Scotland on the East, North, and West. What separates Scotland from Ireland? What separates the mainland from the Orkney Islands? From the Outer Hebrides?

What two large firths are on the east coast? Name the largest inlets on the west coast.

What is the most northerly point of Scotland called? The most southerly? The most easterly?

Name three rivers flowing into the North Sea. Into what water does the Clyde flow? The Nith? The Tweed? The Doon? The Dee?

On what river is Stirling situated? Aberdeen? Glasgow? Dundee? Greenock.?

Which is the largest of the Outer Hebrides? What separates Skye from the Outer Hebrides? Where are Staffa and Iona Islands? Where is Bell or Inch Cape Rock?

What three counties border on England? Name the two most northern counties on the mainland. Name the most easterly county. What counties border on the Firth of Forth? Which is the most south-western county? Name the counties bordering on the Firth of Tay. Which counties border on the North Sea? On the Atlantic Ocean? On the North Channel?

What city is situated on the Clyde? At the northern end of the Caledonian Canal? Near Leith on the Firth of Forth?

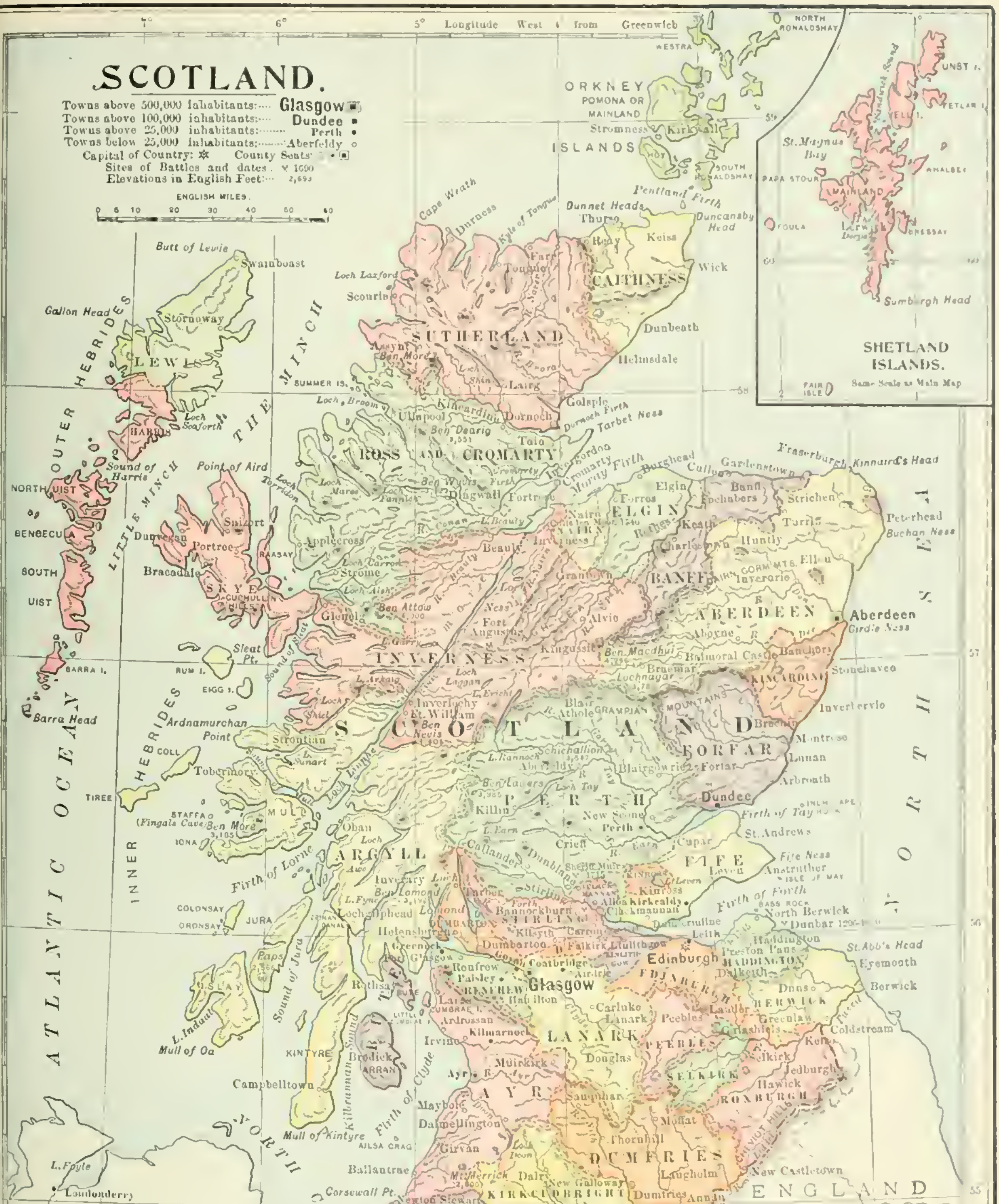
In what county is Edinburgh? Ayr? Dumfries? Hawick? Dundee? St. Andrews? Bannockburn? Inverness? Glasgow?

Scotland consists of a southern upland region, a lowland plain, and a northern mountain mass. Two depressions, Glen More and the Lowlands, divide the country into three mountainous regions. These are the following:—

1. The Northern Highlands, which include the mountain ranges north of Glen More.

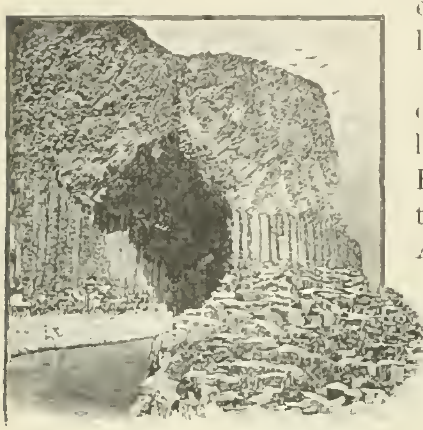
2. The Grampians, which form the Central Highlands. These stretch across the country from east to west and include the highest land in Great Britain, as Ben Nevis (4,406 ft.), Ben Macdhui (4,300 ft.), Cairntoul (4,200 ft.).

3. The Southern upland region. This lies south of the Firth of Forth and contains a number of low ranges of hills.

SCOTLAND.
Towns above 500,000 inhabitants: Glasgow
Towns above 100,000 inhabitants: Dundee
Towns above 25,000 inhabitants: Perth
Towns below 25,000 inhabitants: Aberfeldy
Capital of Country:
County Seats:
Sites of Battles and dates 1600
Elevations in English Feet: 2,693
ENGLISH MILES.
0 5 10 20 30 40 50 60
Longitude West from Greenwich
ORKNEY
POMONA OR MAINLAND
ISLANDS
WESTRA
NORTH RONALDSHAY
Stromness
Kirkwall
HOY
SOUTH RONALDSHAY
Pentland Firth
Dunnet Head
Thurso
Duncansby Head
Keiss
Wick
CAITHNESS
Dunbeath
Helmsdale
Cape Wrath
Durness
Kyle of Tongue
Tongue
Farr
Loch Laxford
Scourie
SUTHERLAND
Assynt
Ben More
Loch Shin
Lairg
Golspie
Dornoch
Dornoch Firth
Tarbet Ness
SUMMER IS.
Loch Broom
Ullapool
Kincardine
Ben Dearig
3,551
Tain
ROSS AND CROMARTY
Invergordon
Cromarty Firth
Moray Firth
Loch Maree
Ben Wyvis
Dingwall
Fortrose
R. Conon
L. Beauly
Applecross
Loch Torridon
Loch Carron
Strome
Loch Alsh
Ben Attow
4,000
Beauly
Inverness
Nairn
NAIRN
Culloden Moor 1746
Burghead
Forres
Elgin
ELGIN
Cullen
Gardenstown
Banff
Fochabers
Fraserburgh
Kinnaird's Head
Strichen
Peterhead
Buchan Ness
Turriff
Keith
Huntly
Charlestown
Ellon
BANFF
CAIRN GORM MTS.
Inverurie
ABERDEEN
Aberdeen
Girdle Ness
Aboyne
Banchory
Balmoral Castle
Braemar
Ben Macdhui
4,296
Lochnagar
3,786
KINCARDINE
Stonehaven
Inverbervie
Brechin
Montrose
Lunan
Arbroath
FORFAR
Forfar
Dundee
Firth of Tay
St. Andrews
Fife Ness
Anstruther
ISLE OF MAY
FIFE
Cupar
Leven
Kinross
KINROSS
Kirkcaldy
Firth of Forth
BASS ROCK
North Berwick
Dunbar 1296-1650
St. Abb's Head
Eyemouth
Berwick
HADDINGTON
Haddington
Preston Pans
Leith
Dunfermline
Edinburgh
EDINBURGH
Dalkeith
Duns
BERWICK
Greenlaw
Lauder
Galashiels
Coldstream
Kelso
Selkirk
SELKIRK
Jedburgh
Hawick
ROXBURGH
CHEVIOT HILLS
PEEBLES
Peebles
Glenelg
Fort Augustus
Loch Ness
Kingussie
Alvie
INVERNESS
Loch Laggan
Loch Ericht
L. Arkaig
Loch Shiel
Inverlochy
Ft. William
Ben Nevis
4,406
Blair Athole
GRAMPIAN MOUNTAINS
SCOTLAND
Schiehallion
3,547
L. Rannoch
Aberfeldy
Blairgowrie
Ben Lawers
3,984
Loch Tay
Killin
PERTH
New Scone
Perth
L. Earn
Crieff
Callander
Dunblane
Sheriff Muir 1715
Stirling
Alloa
Clackmannan
CLACKMANNAN
Bannockburn
Forth
STIRLING
Falkirk
Linlithgow
LINLITHGOW
Kilsyth
Carron
Strontian
L. Sunart
Loch Linnhe
Tobermory
MULL
Ben More
3,185
Oban
Loch Awe
ARGYLL
Inveraray
Loch Fyne
Ben Lomond
3,192
Tarbet
Loch Lomond
Lochgilphead
DUMBARTON
Dumbarton
Helensburgh
Greenock
Port Glasgow
Renfrew
Paisley
RENFREW
Coatbridge
Airdrie
Glasgow
Hamilton
Carluke
Lanark
LANARK
Douglas
Rothesay
BUTE
Largs
CUMBRAE I.
LITTLE CUMBRAE
Ardrossan
Kilmarnock
Irvine
Muirkirk
Ayr
R. Ayr
AYR
Sanquhar
Moffat
Thornhill
DUMFRIES
Langholm
New Castletown
Dumfries
Annan
Gretna Green
Maybole
Dalmellington
Girvan
Ballantrae
Mt. Merrick
2,800
Loch Doon
Dalry
New Galloway
KIRKCUDBRIGHT
Castle Douglas
Kirkcudbright
Newton Stewart
Loch Ryan
Stranraer
Port Patrick
WIGTOWN
Wigtown
Whithorn
Luce Bay
Wigtown Bay
Burrow Head
Mull of Galloway
Solway Firth
R. Eden
R. Tyne
ENGLAND
Corsewall Pt.
AILSA CRAG
Firth of Clyde
Kilbrannan Sound
Brodick
ARRAN
KINTYRE
Campbelltown
Mull of Kintyre
NORTH CHANNEL
L. Foyle
Londonderry
IRELAND
ISLAY
L. Indaal
Mull of Oa
Paps
2,566
JURA
Sound of Jura
COLONSAY
ORONSAY
Firth of Lorne
IONA
STAFFA
(Fingals Cave)
TIREE
COLL
INNER HEBRIDES
Ardnamurchan Point
EIGG I.
RUM I.
Sleat Pt.
Sound of Sleat
SKYE
CUCHULLIN HILLS
Bracadale
Portree
Snizort
Dunvegan
RAASAY
Point of Aird
LITTLE MINCH
THE MINCH
Butt of Lewis
Swainbost
Stornoway
Gallon Head
LEWIS
Loch Seaforth
HARRIS
Sound of Harris
OUTER HEBRIDES
NORTH UIST
BENBECULA
SOUTH UIST
BARRA I.
Barra Head
ATLANTIC OCEAN
NORTH SEA
UNST I.
YELL I.
FETLAR I.
Yell Sound
St. Magnus Bay
PAPA STOUR
MAINLAND
WHALSEY
Lerwick
BRESSAY
FOULA
Sumburgh Head
FAIR ISLE
SHETLAND ISLANDS.
Same Scale as Main Map
59
58
57
56
55
7°
6°
5°
4
3°
2°
1°

A continuous belt of high ground from Cape Wrath to Loch Lomond forms the "Wind and water-parting" of the country. Between the Grampians and the southern uplands is the only plain of any considerable extent in Scotland.

It is usual to divide Scotland into the Highlands and the Lowlands. A line drawn from Dunbarton on the Clyde to Stonehaven on the North Sea marks the division between these two; the Highlands lie to the north-west of this line and the Lowlands to the south-east of it.



Fingal's Cave, Isle of Staffa.

River Systems.—Since the water-parting of Scotland lies near the west coast, the rivers of the eastern slope are much the longer. The largest are the Tweed, Forth, Tay, Dee, Spey, and Ness. On the western slope the largest are the Clyde and Ayr.

The Clyde, between Glasgow and Greenock, is the greatest shipbuilding river in the world. The many manufacturing towns in the basin of this river make it the first commercial river of Scotland. Its lower basin "forms one vast town of mining works and factories for iron, silk, wool, and cotton."

The Tay discharges the greatest amount of water of any river in Great Britain.

At Queensferry the Forth is crossed by the Forth Bridge, one of the greatest bridges in the world.

Lakes.—Scotland abounds in lakes, called lochs, noted for their beauty and surrounded by most picturesque mountain scenery. Lying in valleys they are generally long and narrow. The most important are Lomond, Awe, Ness, Tay, Katrine, and Leven.

Coast Features.—The coast of Scotland i much indented and is about 2,500 miles lon No part of the country is more than 40 mil from sea-water. The east coast from Tarb Ness to the Firth of Forth is generally flat an sandy; from St. Abb's Head to the Tweed i is bold and rocky.

The chief openings are the firths of Forth, Ta Moray, Cromarty, and Dornoch.

The chief headlands are St. Abb's Head, Fife Nes Buchan Ness, Kinnaird's Head and Tarbet Ness.

The islands on the east coast are all small, such Bell (Inch Cape) Rock, Bass Rock, Inchkeith.

The south coast is low and flat. The chief openin are Luce Bay and Wigtown Bay. The chief capes a the Mull of Galloway and Burrow Head

The west coast is bold and formed mainl of hard rocks. It presents a succession deep inlets, bold headlands and long peninsulas. The chief inlets are the firths of Solwa Lorne, and Clyde and the narrow salt-wate indentations known as lochs, the chief o which are Lochs Broom, Linnhe, Fyne, an Ryan.

The chief capes are the Mull of Kintyre and Ardna murchan Point.

The Hebrides number about 500 islands. They ar subdivided into the Inner and the Outer Hebride Skye and Lewis are the largest of them. Staffa ha Fingal's cave, and Iona has remains of ancient churche In the Firth of Clyde are Arran and Bute, formin Buteshire.

The chief straits are Kilbrannan Sound, the sound of Jura, Mull, Sleat, the Minch and the Little Minch.

Loch Katrine.

A sound is a narrow strait, and got its name because it could be swum across.

The huge sea-cliffs forming the northern coast are wild and desolate.

The chief inlets are Thurso Bay, Dunnet Bay, and Loch Eriboll

The capes are Duncansby Head, Dunnet Head, and Cape Wrath.

The northern islands are the following:

1. The Orkney group, consisting of 67 islands, of which about 40 are inhabited. The largest is Pomona, or Mainland.

2. The Shetland group, consisting of over 100 islands, of which between 30 and 40 are inhabited.

The inhabitants of these two groups are engaged in fishing, farming, and knitting.

Industries.—Scotland is noted for skilful farming. The chief crops are oats, barley, wheat, potatoes, and turnips. In the Highlands, the rearing of cattle and the fisheries are the chief branches of industry. Mining, manufactures, and commerce are, however, the chief industries of the country. Manufactures are largely pursued in the Lowlands, within the coal and iron district between the Forth and the Clyde.

The *Cotton* manufacture is carried on chiefly in Glasgow and Paisley.

Woollens are manufactured chiefly in the valley of the Tweed, at Galashiels, Hawick, &c.

Linen and *Jute* manufacturing is centered at Dundee.

Paper is extensively made in Aberdeenshire and near Edinburgh.

Shipbuilding is chiefly carried on on the Clyde. Here the largest steamers and ironclads are built.

The commerce of Scotland resembles that of England. The imports are chiefly raw materials for manufacture and foodstuffs. The exports are manufactured goods, together with a considerable amount of farm produce, as cattle, sheep, and oats to England.

The chief ports are Glasgow and Greenock on the west, and Leith, Aberdeen and Dundee on the east.

Glasgow is the second city in Great Britain and the greatest shipbuilding centre in the world. Its success is due to its fine harbor, its nearness to mines of coal and iron ore, and to the development of trade with America.

Greenock refines sugar, and builds iron and steel ships.

Leith is the port of Edinburgh.

Dundee imports jute from India, and flax from Russia. It exports linen, jute and hemp goods.

Aberdeen, the "Granite City," has a large coasting and fishing trade.

Scotland is divided into 32 counties, which may be classified as follows:—

1. The thirteen South-Lowland counties— Kirkcudbright, Roxburgh, Wighton, Dumfries, Selkirk, Ayr, Lanark, Peebles, Berwick, Haddington, Edinburgh, Linlithgow, and Renfrew.

2. The seven North-Lowland counties—Dunbarton, Stirling, Clackmannan, Fife, Kinross, Kincardine, and Forfar.

3. The three South-Highland counties—Bute, Argyle, and Perth.

4. The nine North-Highland counties—Aberdeen, Banff, Elgin, Nairn, Inverness, Ross and Cromarty, Sutherland, Caithness, and Orkney and Shetland.

IRELAND.

Map Studies.

How is Ireland separated from Scotland? Give the boundaries of Ireland.

Name the chief inlets on the east coast. On the north coast. On the west coast. On the south coast.

Name the most northerly point in Ireland; the most southerly; the most westerly.

What rivers flow into the Irish Sea? In what direction does the Shannon flow? The Barrow? The Bann? The Foyle? The Boyne? The Liffey?

Into what body of water does the Lee empty? The Shannon? The Boyne? The Bann? The Barrow?

Giant's Causeway, Ireland.

On what river is Dublin situated? Cork? Londonderry? Limerick? Belfast? Galway?

What counties border on the northern coast? On the eastern coast? On the southern coast? On the western coast? What counties border on the North Channel? On the Irish Sea?

Which is the most southerly county? The most northern? The most eastern? The most western?

What city is situated on the Liffey? On the Lee? On the Foyle? On the Shannon?

In what county is the City of Waterford? City of Cork? Belfast? Dublin? Limerick? Londonderry?

Ireland is a great interior plain, broken here and there by hills and surrounded by short ranges of mountains which lie chiefly round the coast. The central plain, covering about about one-quarter of the country, is 160 miles long and 120 miles wide. It is low and boggy in character and is nowhere more than 300 feet high.

The highlands may be arranged into four groups:—

1. The Northern Highlands, including the mountains of Antrim and Donegal.

2. The Eastern Highlands, including the Wicklow mountains and the Mourne mountains in the County of Down.

3. The Southern Highlands, including the Knockmealdown and Galtee mountains.

4. The Western Highlands, including the mountains of Kerry, the Connemara mountains, and the Nephin Beg mountains.

River Systems.—With the exception of the Shannon, the rivers of Ireland rise in the heights which border the central plain, and fall into the sea on the same side of the island as that on which they rise. Hence they are short.

The most important are the Bann and the Foyle on the north; the Boyne and Liffey on the east; the Barrow, Blackwater, and Lee on the south; and the Shannon in the west.

The *Shannon* is the largest river in the British Isles. It rises in the County of Cavan, flows through Loughs Allen, Ree, and Derg and enters the Atlantic by a broad and deep estuary 60 miles long.

Lakes.—Owing to the dampness of the climate, combined with the nature of the surface, there are many lakes in Ireland.

The most important are Neagh, Erne, Conn, Corrib, Mask, Ree, Derg, and Killarney.

The largest is Lough Neagh, and the most beautiful the Lakes of Killarney.

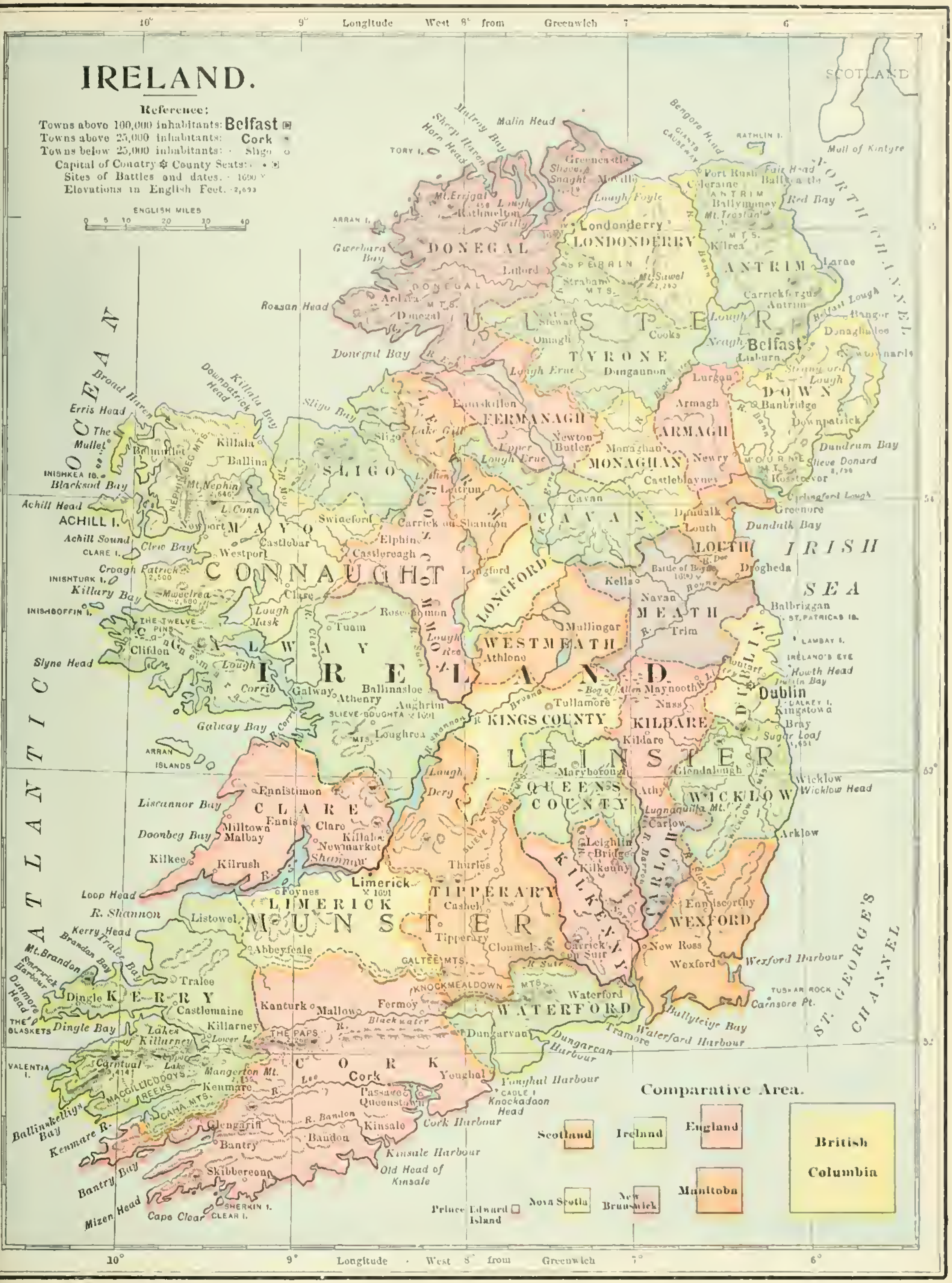
Coast Features.—The north coast is bold and rocky. The Giant's Causeway is one of the natural wonders of the world. It is 2,000 feet long, 1,000 feet broad and is composed of immense basaltic pillars.

Scene on the Coast of Ireland.

The chief openings in this coast are Loughs Foyle and Swilly.

The principal headlands are Fair Head, 14 miles from Scotland, Bengore Head, Malin Head, and Horn Head.

On the north coast the chief islands are Rathlin and Tory.


IRELAND.
Reference:
Towns above 100,000 inhabitants: Belfast
Towns above 25,000 inhabitants: Cork
Towns below 25,000 inhabitants: Sligo
Capital of Country & County Seats
Sites of Battles and dates. 1690
Elevations in English Feet. 2,693
ENGLISH MILES
0 5 10 20 30 40
Longitude West 8° from Greenwich
10° 9° 7 6
55° 54° 53° 52°
SCOTLAND
Mull of Kintyre
NORTH CHANNEL
IRISH SEA
ST. GEORGE'S CHANNEL
ATLANTIC OCEAN
ULSTER
CONNAUGHT
LEINSTER
MUNSTER
IRELAND
DONEGAL
LONDONDERRY
ANTRIM
TYRONE
FERMANAGH
ARMAGH
DOWN
MONAGHAN
CAVAN
SLIGO
LEITRIM
MAYO
ROSCOMMON
GALWAY
LONGFORD
WESTMEATH
MEATH
LOUTH
DUBLIN
KINGS COUNTY
QUEENS COUNTY
KILDARE
WICKLOW
CARLOW
KILKENNY
WEXFORD
CLARE
LIMERICK
TIPPERARY
WATERFORD
KERRY
CORK
Malin Head
Tory I.
Horn Head
Sheep Haven
Mulroy Bay
Mt. Errigal
Lough Swilly
Rathmelton
Arran I.
Gweebarra Bay
Rossan Head
Donegal Bay
Donegal
Ardara
Lifford
Strabane
Omagh
Londonderry
Lough Foyle
Greencastle
Moville
Coleraine
Port Rush
Giants Causeway
Bengore Head
Rathlin I.
Fair Head
Ballycastle
Red Bay
Ballymoney
Mt. Trostan
Kilrea
Larne
Carrickfergus
Antrim
Belfast Lough
Bangor
Donaghadee
Newtownards
Lough Neagh
Belfast
Lisburn
Lurgan
Cooks
Dungannon
Strangford Lough
Banbridge
Downpatrick
Dundrum Bay
Slieve Donard 2,796
Mourne Mts.
Rostrevor
Carlingford Lough
Greenore
Newry
Armagh
Monaghan
Castleblayney
Newton Butler
Enniskillen
Lough Erne
Upper Lough Erne
Sligo
Sligo Bay
Lough Gill
Killala Bay
Killala
Ballina
Downpatrick Head
Broad Haven
Erris Head
The Mullet
Belmullet
Inishkea Is.
Blacksod Bay
Mt. Nephin
Achill Head
Achill I.
Achill Sound
L. Conn
Newport
Castlebar
Clew Bay
Westport
Clare I.
Croagh Patrick 2,500
Inishturk I.
Killary Bay
Mweelrea 2,680
Inishboffin I.
The Twelve Pins
Clifden
Slyne Head
Lough Mask
Lough Corrib
Tuam
Galway
Athenry
Galway Bay
Arran Islands
Ballinasloe
Aughrim
Slieve Boughta 1691
Loughrea
Swineford
Carrick on Shannon
Elphin
Castlereagh
Claremorris
Roscommon
Longford
Lough Ree
Athlone
Mullingar
Cavan
Dundalk
Dundalk Bay
Louth
Kells
Battle of Boyne 1690
Drogheda
Navan
Trim
Balbrigzan
St. Patricks Is.
Lambay I.
Ireland's Eye
Howth Head
Dublin Bay
Dublin
Dalkey I.
Kingstown
Bray
Sugar Loaf 1,651
Maynooth
Naas
Bog of Allen
Tullamore
Kildare
Glendalough
Wicklow
Wicklow Head
Lugnaquilla Mt.
Maryborough
Athy
Carlow
Leighlin Bridge
Kilkenny
Arklow
Enniscorthy
New Ross
Wexford
Wexford Harbour
Tuskar Rock
Carnsore Pt.
Ballyteige Bay
Waterford Harbour
Tramore
Waterford
Carrick on Suir
Clonmel
Tipperary
Cashel
Thurles
Lough Derg
Slieve Bloom
Ennistimon
Liscannor Bay
Doonbeg Bay
Milltown Malbay
Ennis
Clare
Killaloe
Newmarket
Kilkee
Kilrush
Loop Head
R. Shannon
Limerick 1691
Foynes
Listowel
Abbeyfeale
Kerry Head
Tralee Bay
Brandon Bay
Mt. Brandon
Smerwick Harbour
Dunmore Head
The Blaskets
Tralee
Dingle
Dingle Bay
Castlemaine
Killarney
Lakes of Killarney
Valentia I.
Carntual 3,414
Macgillicuddy's Reeks
Mangerton Mt.
Kenmare
Kenmare R.
Caha Mts.
Ballinskelligs Bay
Galtee Mts.
Knockmealdown Mts.
Kanturk
Mallow
Fermoy
Blackwater
The Paps
Dungarvan
Dungarvan Harbour
Youghal
Youghal Harbour
Cork
Passage
Queenstown
Cable I.
Knockadoon Head
Cork Harbour
Kinsale
Kinsale Harbour
Old Head of Kinsale
Bandon
R. Bandon
Glengariff
Bantry
Bantry Bay
Skibbereen
Mizen Head
Cape Clear
Clear I.
Sherkin I.
Comparative Area.
Scotland
Ireland
England
British Columbia
Nova Scotia
New Brunswick
Manitoba
Prince Edward Island

The east coast is generally flat, sandy and regular There are many sandbanks and sunken rocks to obstruct navigation.

The chief inlets are Wexford Harbor, Dublin Bay, Dundalk Bay, Dundrum Bay, and Belfast Lough. The main headlands are Wicklow Head and Howth Head.

The islands off this coast are small and unimportant.

The south coast has several fine harbors, as Cork, Youghal, Dungarvan, and Waterford.

The principal capes are Clear and Mizen. There are no important islands off this coast. Clear is the largest.

The west coast is high, rocky and being exposed to the full force of the Atlantic, is much broken and very irregular.

The principal openings in the west are the Bays of Donegal, Sligo, Clew, Galway, Dingle, and Bantry, and tho estuary of the Shannon.

The chief capes are Rossan Head, Achill Head, Loop Head, and Dunmore Head.

There are many islands off this coast, but none are of any considerable magnitude. The most important is Valentia, the terminus of the submarine cable to Newfoundland.

The soil of Ireland is generally fertile. Oats and potatoes are commonly grown. Cattle, sheep and pigs are extensively raised.

Lakes of Killarney, Ireland.

Manufactures flourish, principally in the north and east, where the linen manufacture is pursued on a large scale, and woollens and cotton goods are also manufactured.

Linen is made chiefly at Belfast, Armagh, Largan, and Newry.

Shipbuilding is centered at Belfast, where large iron and steel vessels are built.

Lace is extensively made by the women of the west.

Shannon River, Ireland.

Ireland has few minerals. There is considerable iron ore, but little coal wherewith to work it. Hence her manufactures are much less extensive than those of Great Britain.

The commerce of Ireland is chiefly with Great Britain. The imports are coal, manufactured goods, and tea, sugar, and coffee. The chief importing ports are Dublin, Cork, and Belfast.

The exports are linen, and agricultural products.

The chief ports are Dublin, Belfast, Cork, Waterford, Limerick, Galway, and Londonderry.

Dublin is the capital. It has shipbuilding yards, and manufactures poplins and woollen goods.

Belfast is the principal manufacturing centre of Ireland. This pre-eminence is due to the following causes: 1. It is situated on the Ulster coal field. 2. Coal and iron can be readily imported from Great Britain. 3. The climate favors linen making.

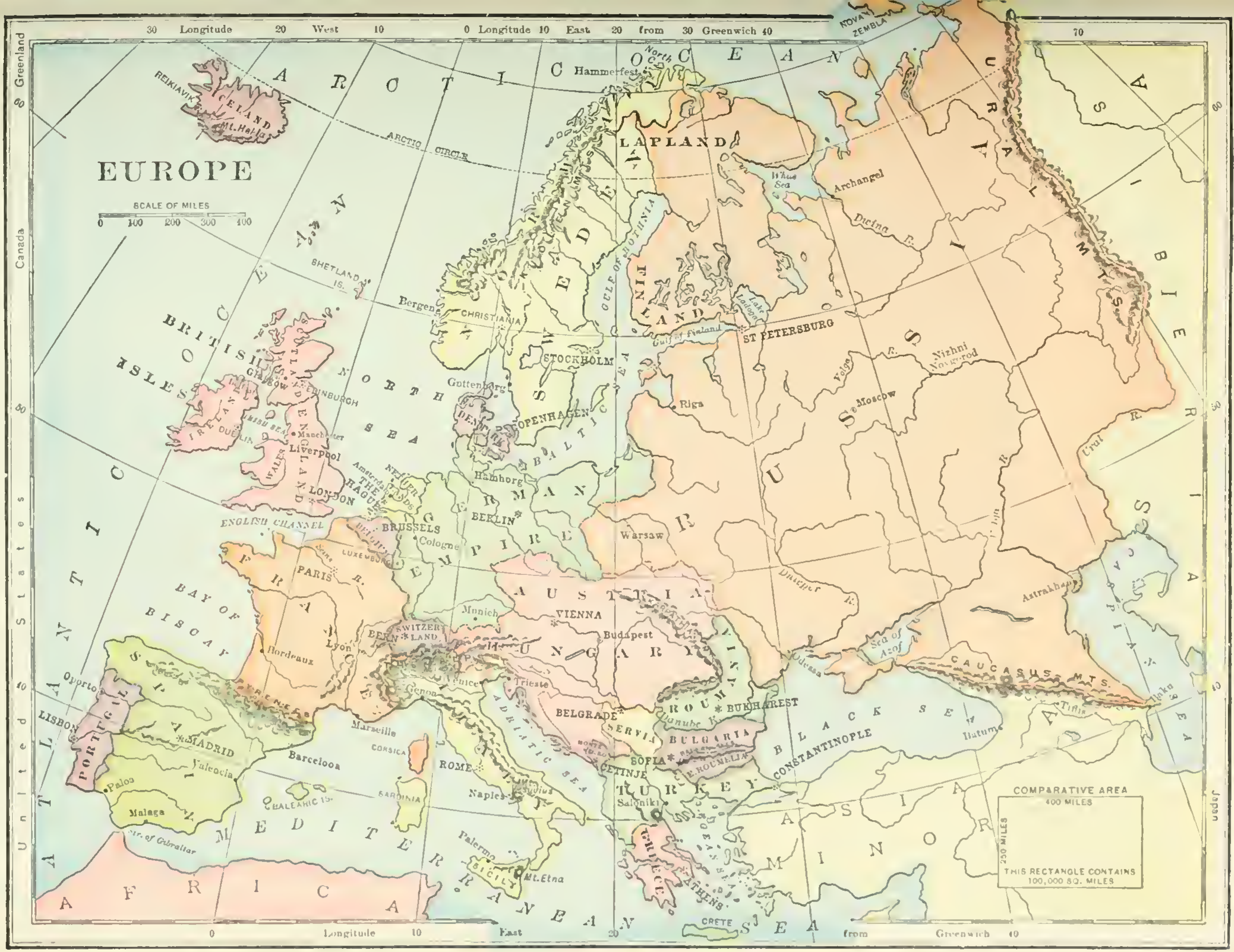
Cork exports cattle and provisions. Atlantic steamers call at Queenstown on an island in Cork harbor.

Waterford has a large cattle trade with Bristol.

Limerick exports agricultural products and makes gloves and lace.

Galway has important fisheries.

Londonderry exports farm produce. North American steamers from Glasgow call here.


EUROPE
SCALE OF MILES
0 100 200 300 400
ARCTIC OCEAN
ARCTIC CIRCLE
ATLANTIC OCEAN
NORTH SEA
BALTIC SEA
GULF OF BOTHNIA
Gulf of Finland
White Sea
BAY OF BISCAY
ENGLISH CHANNEL
IRISH SEA
MEDITERRANEAN SEA
ADRIATIC SEA
AEGEAN SEA
BLACK SEA
Sea of Azof
CASPIAN SEA
Str. of Gibraltar
ICELAND
REIKIAVIK
Mt. Hekla
SHETLAND IS.
BRITISH ISLES
SCOTLAND
EDINBURGH
Glasgow
ENGLAND
Manchester
Liverpool
LONDON
WALES
IRELAND
DUBLIN
NORWAY
SWEDEN
Hammerfest
North C.
LAPLAND
Bergen
CHRISTIANIA
STOCKHOLM
Gottenburg
DENMARK
COPENHAGEN
FINLAND
Lake Ladoga
ST PETERSBURG
Archangel
Dwina R.
Riga
RUSSIA
Moscow
Nizhni Novgorod
Volga R.
Ural R.
URAL MTS.
Warsaw
Dnieper R.
Odessa
Astrakhan
CAUCASUS MTS.
Tiflis
Baku
Batum
NOVAYA ZEMBLA
SIBERIA
GERMAN EMPIRE
Hamburg
BERLIN
Cologne
Munich
NETHERLANDS
Amsterdam
THE HAGUE
BELGIUM
BRUSSELS
LUXEMBURG
FRANCE
PARIS
Seine R.
Lyon
Bordeaux
Marseille
PYRENEES
SWITZERLAND
BERN
ALPS
AUSTRIA-HUNGARY
VIENNA
Budapest
Trieste
CARPATHIAN MTS.
ROUMANIA
BUKHAREST
Danube R.
SERVIA
BELGRADE
BULGARIA
SOFIA
E. ROUMELIA
MONTENEGRO
CETINJE
TURKEY
CONSTANTINOPLE
Saloniki
GREECE
ATHENS
CRETE
ITALY
Genoa
Venice
ROME
Naples
Brindisi
Palermo
SICILY
Mt. Etna
CORSICA
SARDINIA
SPAIN
MADRID
Barcelona
Valencia
Malaga
Palos
BALEARIC IS.
PORTUGAL
LISBON
Oporto
AFRICA
ASIA MINOR
COMPARATIVE AREA
400 MILES
250 MILES
THIS RECTANGLE CONTAINS 100,000 SQ. MILES
30 Longitude 20 West 10 0 Longitude 10 East 20 from 30 Greenwich 40
70
0 Longitude 10 East 20 from Greenwich 40
Greenland
Canada
United States
Japan
60
50
40

Ireland is divided into four provinces and these are subdivided into thirty-two counties. The provinces are Ulster in the north, Leinster in the east, Munster in the south, and Connaught in the west. These four provinces, with Meath, at one time formed separate kingdoms, but now they form only geographical boundaries.

1. The nine counties of Ulster are Antrim, Londonderry, Donegal, Tyrone, Armagh, Down, Monaghan, Cavan, and Fermanagh.

2. The twelve counties of Leinster are Louth, Meath, Westmeath, Longford, Dublin, Kildare, King's County, Queen's County, Wicklow, Wexford, Carlow, and Kilkenny.

3. The six counties of Munster are Tipperary, Limerick, Clare, Kerry, Cork, and Waterford.

4. The five counties of Connaught are Galway, Mayo, Sligo, Leitrim, and Roscommon.

4. Region of the Alps.

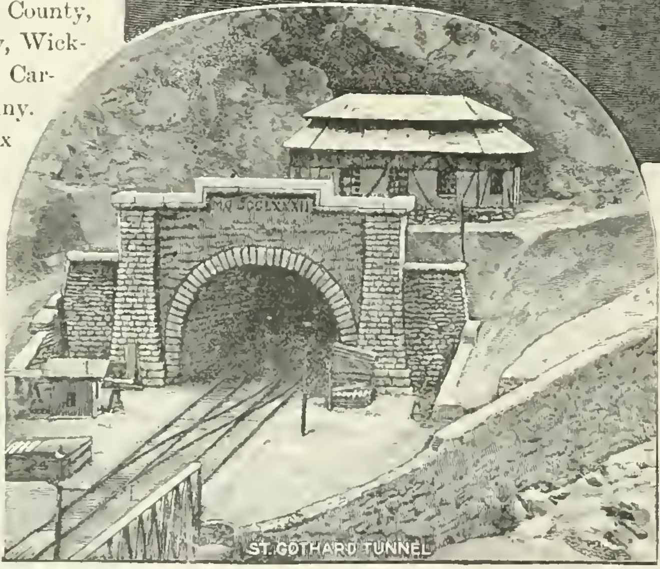
The outlet of the Black sea separates the plateau region of southwest Asia from a chain of highlands stretching westward to the Atlantic coast. The Alps, which form the mountain centre of south-west Europe, are about as high as the Rocky mountains in the park region.

The Alps have many sharp peaks, for they are too young to be greatly worn down. They are not nearly so old as the Appalachian highland. Slight earthquake shocks are frequent in the Alps, and are taken to mean that the mountains are still growing higher.

Among the Alps are great snow-capped peaks, down whose sides long glaciers slowly wind, melting in the valleys.

The Alps are pierced by several railroad tunnels.

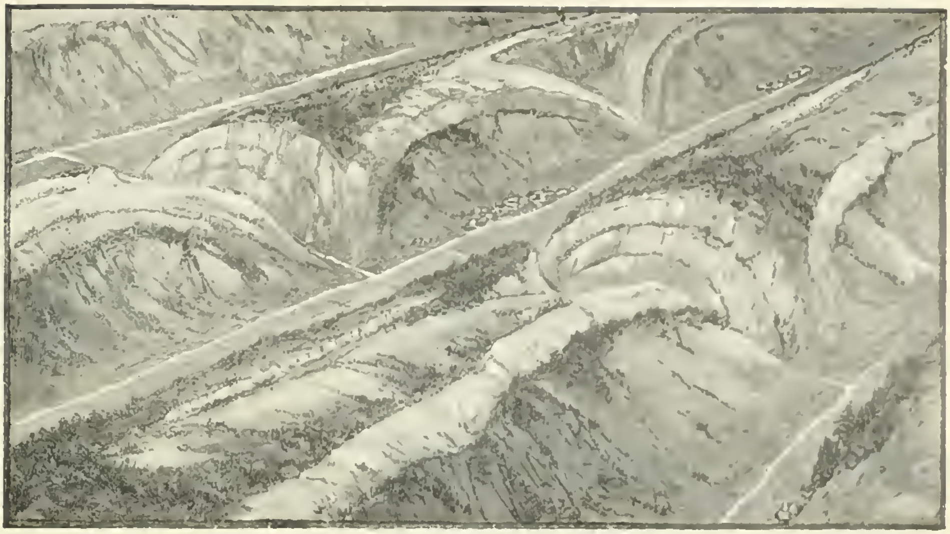
Mont Blanc.



The St. Gothard tunnel is nearly ten miles long,—the second longest in the world; the Simplon, completed in 1905, is 12 miles long. These connect the Swiss plateau with the basin of the Po river. Mount Cenis tunnel is near the western end of the Po basin.

Thousands of cattle graze in the valleys among the Alps. As the warm season approaches and the winter snow melts away, the cattle are driven to the grassy slopes high up the mountain sides. The cold season finds the herds again in the lower valleys. Cheese is a valuable product in the highland region, and is a leading article of export.

There is very little coal in the Swiss plateau, but swift streams supply plenty of power for the mills and factories. The Swiss people weave large quantities of silk and cotton goods, and make many fine watches.



Ridges and Troughs of the Jura Regions.

The western part of the Alps bends southward between the valleys of the Po and the Rhone. This part of the mountain chain extends to the shore of the Mediterranean sea.

A long branch called the Apennines runs the entire length of the peninsula of Italy.

On the western side of the Rhone valley rises the broad range known as the *Cevennes.* These mountains are much older and lower than the Alps, and contain the ources of many treams flowng westward to he Atlantic.

The ura mounains xtend rom the Rhine river south-west into the valley of the Rhone. They consist chiefly of low arches or folds, so young that they have not yet been greatly worn. *See illustration above.*

The mulberry tree, upon whose leaves the silkworm feeds, is common in southern Europe. The city of Lyons, at the junction of the Rhone and Saone rivers, has the largest silk manufactories in the world.

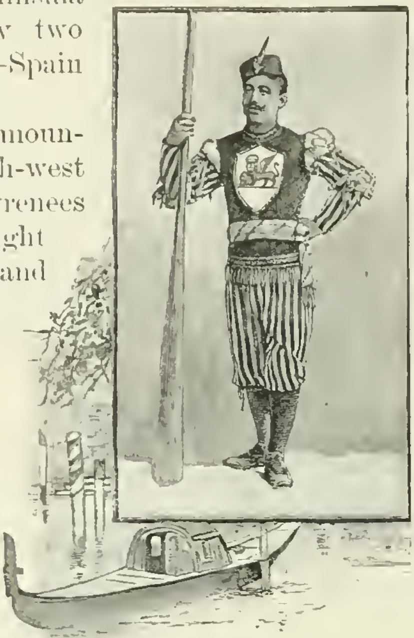
The Rhone, like all other rivers flowing into seas having only faint currents, is making a delta. This river is so rapid that only steamers can stem its current above the delta plain, and thus reach Lyons.

On the north of the Swiss plateau, many old and low mountains extend far into Germany. The surface of these mountains has been worn down to layers of rock that were once deep in the earth. They are rich in iron ore and other minerals.

There are so many mines in these old mountains that the Germans speak of all mining as *mountain work.*

On the east the Alpine highland reaches out to the Carpathian range. On the south-east the highland sends out branch ranges into the Balkan peninsula. These are mostly low, like the mountains shown in the picture of *Marathon,* on this page.

5. The Spanish Peninsula.



Venetian Gondolier.

The great peninsula in south-west Europe is known as the *Spanish peninsula.* The lofty Pyrenees mountains extend across its isthmus. This great peninsula is shared by two countries,—Spain and Portugal.

Among the mountains of south-west Europe, the Pyrenees are next in height to the Alps, and form a lofty barrier between France and Spain.

The Spanish peninsula consists mainly of broad tablelands, with a border of narrow coastal plains on the east and the west. Mountain ranges almost inclose the upland region, and other ranges extend across it. The general level is about half a mile above the sea. This broad upland surface is swept by chilly winter winds, and is parched by summer sunshine. Only the spring and autumn months are mild. The rainfall is so light that the plateaus are almost treeless.

The river valleys in this peninsula are fertile. Those of the Ebro and Guadalquivir rivers form the broadest lowlands, but even these are not very broad. The narrow coastal plains also are fertile. Those on the west and south-west coasts receive heavy rainfall; those on the east are well irrigated from immense reservoirs in the uplands. Wheat and barley are the chief grain crops, but the peninsula is noted for its vineyards and orange groves Wine is the chief article of export.

On the southern coast of Spain, near the strait Gibraltar, a small but famous peninsula extends int the sea. The body of the peninsula consists of a ma of rock, about two miles and a half long, known a the *Rock of Gibraltar.* This Rock was once an islan but sandy waste filled in the strait at its northern en and now a flat neck unites the Rock with the mainlan Gibraltar is the strongest fortress in the world. belongs to the British nation.

6. The Po and the Apennines.

The Po river flows though a plain that i not many feet above the sea level. This plai is made of waste worn from the Alps and th Apennines. The lowland consists of floo and delta plains. No other region in Europ rivals the valley of the Po in the grandeur o its magnificent landscapes.

The melting snow and ice in the high Alps fee many of the Po branches. One of these flows fro a glacier on Mount Blanc.

Along the northern border of the plain, near th foot of the Alps, are some of the Alpine lakes tha are famous for their beauty. Among these are Com Garda and Maggiore.

The Adige river drains part of this lowland but do not join the Po. The floods of these rivers are so dangerous that dykes have been built to confine th water. As the streams continue to fill thei channels with waste from the mountain the dykes are built higher. In som places the surfaces the rivers are no higher than the plai

Rock of Gibraltar.

Pass of St. Bernard.

The marshy deltas of the Po and the Adige are rapidly growing into the Adriatic sea. Some places that were once seaports are now several miles inland. Along the coast, sandy islands almost inclose lagoons.

The city of Venice is built on islands in one of these lagoons. In this city, canals partly take the place of streets. Boats called *gondolas* are seen everywhere on the canals.

Irrigating canals reach almost every part of the valley of the Po and the Adige, making it one large garden. Grains of all kinds thrive there, and the foothills are covered with vineyards. The meadows are mowed five or six times a year,—yielding fine grass for dairy cattle. Mulberry trees abound.

The St. Bernard pass is one of the most famous passes in the routes over the Alps from the Po valley. Since the building of the railroads these lofty passes have been little used by travellers.

From the fertile plains in the north, the Apennines extend towards the south-east through the entire length of the peninsula of Italy. This celebrated range is older than the Alps, and has no such lofty peaks as those rising on the north-west of the Po basin, but the upper parts of the Apennines are buried in snow all winter.

Italian Piper.

The foothills and coastal plains south-west of the range are sheltered, and produce many kinds of fruit. Among these are oranges, lemons, olives, and grapes. This region is also famous for mulberry trees. Silk is the most valuable export from Italy.

The leaning tower, shown below, is in *Pisa*, a city on the Arno river, Italy. Two thousand years ago Pisa was only two miles from the mouth of the Arno; now it is six miles, for the river has meanwhile built its delta out into the sea.

The famous leaning tower is 183 feet high, and it leans 13 feet from an upright position. The walls of the tower are very thick, and are made of marble.

7. The Balkan Peninsula.

Many ranges branch from the eastern end of the Alps. Some of these turn towards the south-east and divide into smaller ranges, forming the highland in the Balkan peninsula. This broad peninsula stretches from the Black sea to the Adriatic.

Leaning Tower of Pisa.

The Balkan range is the highest in the peninsula. These mountains extend east and west along the southern border of the Danube basin.

Forests of pine and oak grow on the Balkan slopes, and in other parts of the rugged highland of this peninsula. Thousands of swine feed on the acorns.

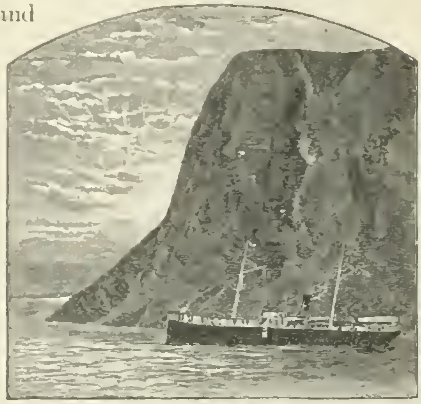
The roses which thrive near the Balkan range yield a perfume known as *attar of roses*.

The lowlands in the Balkan peninsula are very fertile. The hilly portions afford good pastures

The middle belt of the Balkan peninsula is occupied by Turkey. Owing to the poor way in which the country is governed, the people are shiftless, and do not make good use of their land. Wheat, raisins, and tobacco are valuable products. Constantinople, on the strait called the *Bosphorus*, is the chief port of Turkey.

The Pindus mountains are low, but they run like a backbone through the southern part of the peninsula. There, in the small country of Greece, many deep and broad valleys lie between the branches of this range.

On the plains of Marathon, shown in the picture on page 161, the ancient Greeks won a great victory over a large army of Persians. This plain lies between the mountains and the sea. Most of the mountains in Greece are small and greatly worn, like those which overlook the plain of Marathon.


North Cape, Norway.

The southern part of Greece is a peninsula having a very narrow neck known as the *isthmus of Corinth.* A ship canal has been cut through this isthmus. The small raisins of Greece are called *currants,*—a corruption of the word *Corinth.* Currants are the most valuable product which Greece sends to other countries.

Many years ago the Greeks were famous for their learning and their works of art. They built grand temples in which they placed beautiful statues made of marble, or of ivory and gold. Many of the marble statues, and the ruins of some of their temples, still exist. The most famous temples were built on a fortified hill, known as the *Acropolis,* in Athens.

On the highest part of this hill stood the *Parthenon,* —the grandest of all the temples. Within and without the Parthenon were statues and friezes which rank foremost among ancient sculptures. Many of these are now preserved in the British Museum, in London.

8. The Plain of Hungary.

The Carpathian mountains partly divide *High Europe* from *Low Europe.*

The lowland part of the Danube basin which lies south-west of the Carpathian mountains, is known as the *plain of Hungary.* This is a young plain which was formerly the bed of a lake. The leading products are sugar beets and grain. The plain of Hungary supports nearly three and a half times as many people as there are in Canada. The Danube and its branches form a waterway to almost every part of the plain. The main river affords an outlet eastward.

Far the greater part of the Danube basin is in the country of Austria-Hungary, which includes the plain of Hungary. The leading articles of export from this country are beet sugar, grain, and lumber. Vienna, the largest city, is built near the place where the Danube river leaves the mountain district on the west and enters the plain of Hungary.

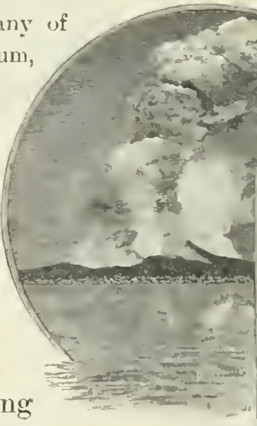
9. The Scandinavian Peninsula.

The Scandinavian peninsula is the largest peninsula in Europe,—being more than a thousand miles long. The highland in this great tongue of land is very old, like the Laurentian highland.

The Scandinavian highland was once worn low, then raised again, cut by deep valleys, and at length partly drowned.

The western slopes of this highland are steep and rugged. They descend to many long and deep fiords. Along the coast are countless islands formed by the partial drowning of the highland.

The western slopes of the Scandinavian highland resemble the sides of the Alps in having glaciers, torrents, falls, lakes and forests; but, unlike the Alps, the old Scandinavian mountains are often flat-topped, and together they form a rugged plateau.


Vesuvius.

Excavations in Pompeii.

Along the west coast of the great peninsula extends a series of banks over which the water is shallow. Beyond them the water is very deep. These banks, like shoals along many other shores, abound in fish.

SOGNE FIORD. NORWAY.

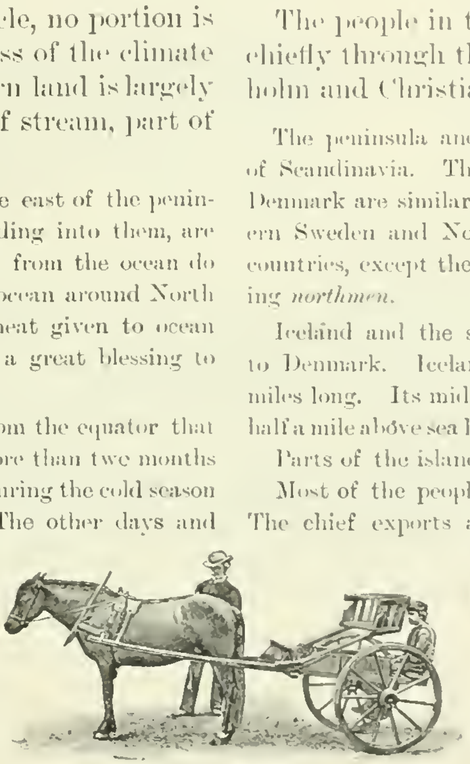
The Lofoden islands form a group off the north-west coast of the peninsula. The tide rushes with great force between two of these islands. Boats are sometimes lost in this strong tide, known as the *maelstrom.*

The eastern slope of the Scandinavian highland is more gentle than the western, and descends to a rolling lowland. Many rivers cross this lowland, and flow into the gulf and sea on the east and south.

Although the northern part of this peninsula lies within the Arctic circle, no portion is in the cold belt. The mildness of the climate along the coast of this northern land is largely due to the drift from the Gulf stream, part of the North Atlantic current.

In winter the sea and gulf on the east of the peninsula, as well as the wide straits leading into them, are frozen over, for here the mild winds from the ocean do not enter. At the same time, the ocean around North cape is free from ice. Thus the heat given to ocean currents in the torrid zone proves a great blessing to people in this far-away land.

The North cape is so far away from the equator that in the warm season the sun for more than two months does not sink below the horizon. During the cold season there is a night of equal length. The other days and nights vary in length from a few minutes to twenty-four hours.


Norwegian Cart.

Two countries comprise the greater part of the Scandinavian peninsula. They are Norway on the west, and Sweden on the east. Nearly all the people in these countries belong to the white race, but the Lapps, in the north, are a branch of the yellow race.

Some of the Lapps keep herds of reindeer. Others catch fish in the lakes, streams and sea. In winter their land is buried in snow and ice.

Large crops of grain are raised in the southern lowland of the Scandinavian peninsula, and there most of the people live. This peninsula is in the great forest belt which extends from the Atlantic ocean to the Pacific. Norway pine and fir are leading exports. There are also rich mines of iron ore in the old rocks of the peninsula.

The people in these countries carry on trade chiefly through the two large cities of Stockholm and Christiania.

The peninsula and islands of Denmark form a part of Scandinavia. The surface, climate and products of Denmark are similar to those of the lowlands in southern Sweden and Norway. The people of these three countries, except the Lapps, are called *Norsemen*, meaning *northmen.*

Iceland and the southern part of Greenland belong to Denmark. Iceland is a volcanic island about 300 miles long. Its middle region is a table-land less than half a mile above sea level and covered with lava and sand. Parts of the island are perpetually buried in ice.

Most of the people in Iceland live near the coasts. The chief exports are codfish, wool and eider-down. No grains and only a few vegetables are raised on the island. The best-known of the Iceland volcanoes is Mt. Hecla. Iceland is remarkable for its geysers, one of which throws a column of water about one hundred feet into the air.

Windmills in Holland.

10. Low Europe—Western Part.

West of the Alpine highland lies the lowland of France.

In what general direction do the rivers of this lowland flow? Name two of them.

Between the Pyrenees and the wide mouth of the Gironde river extends a young coastal plain, low and flat. This region is known as the *Landes*, and consists of wide marshes and sandy tracts.

Northward from the Gironde river the central part of France is rolling and hilly.

Very low plains lie along the southern shore of the North sea. Part of this lowland is a young coastal plain, and part is the delta plain of the Rhine river. In some places the land surface is sunk below the level of the sea, and dykes have been built to keep out the salt water. Portions of the plain have been reclaimed from the sea. Lagoons were surrounded by dykes to prevent more water flowing into them, and were then pumped dry.

The Falls of the Rhine, on the border of Switzerland.

Canals form a network over these lowlands and afford cheap water ways to all parts of the low country. Thousands of windmills are kept busy pumping water from the fields into the canals. A man's wealth may here be counted in windmills and cattle. One portion of these flat plains is known as *Holland*, or the *Netherlands*,—meaning *lowlands*. On the south-west is Belgium.

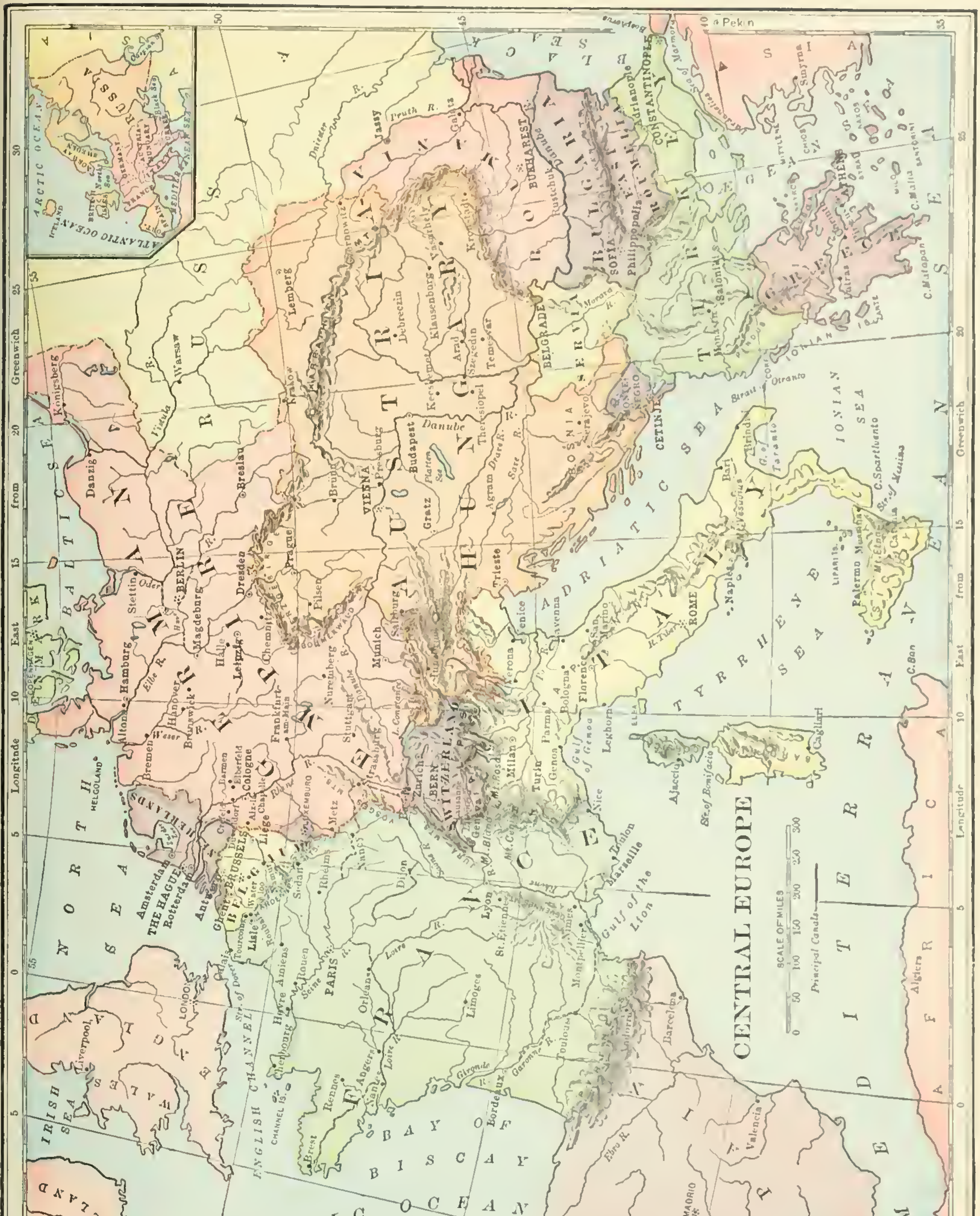
The Rhine river, above its delta plain, has cut a deep valley through a broad rolling upland. Many of the Rhine branches also have worn valleys in this upland.

The battle-scarred house shown on next page is near the village of Waterloo, about nine miles south-westward from Brussels, in Belgium. The house was torn by shot and shell in the great battle of Waterloo, in which the power of Napoleon was broken. This famous French general was banished to the lonely island of St. Helena, where he died.

Cologne, on the lower Rhine.

North-eastward from the Netherlands, low swampy or sandy coastal plains border on the North and Baltic seacoasts. The lowlands are crossed by the Elbe, the Oder and the Vistula rivers, flowing from the border of the highland region.

The regions on the west and north of the



CENTRAL EUROPE

Alpine highland are in the path of the westerly winds of the cool belt, and are therefore well supplied with rainfall. Cereals are plentiful in the rolling uplands, and many of the sunny slopes of the river valleys are covered with vineyards. Most of the grapes are used in making wine, some of which is sent to our country.

Battle-scarred House, Waterloo, Belgium.

A large and thriving industry, on the plains reaching from France through Germany and into the valley of the Danube, consists in raising sugar-beets and making sugar from their juice.

We have learned that iron ore, coal and other minerals abound in the old mountain uplands. These products have led to the building of mills and factories of almost every kind. Cloth and iron goods are leading manufactures.

Excellent clay for making pottery, and sand for making glass, are found in many parts of the region west and north of the Swiss highland.

The western part of Low Europe is thickly settled, because the climate is good, the country is suited to easy travel, and products are plentiful. Among the great centres of trade are Paris, Antwerp, Amsterdam, Hamburg and Berlin.

11. Countries of Low Europe—Western Part.

The German Empire.—The German Empire consists of a Federal Union of twenty-five states and the newly-acquired province of Alsace-Lorraine.

It has rich coal and iron mines, beds of clay for making porcelain, and sand for making glass. The river valleys of this country are famous for their wine grapes. Large areas are planted with sugar-beets and with cereals.

The principal manufactures of this country are cloth, iron articles, beet sugar, glass, and porcelain.

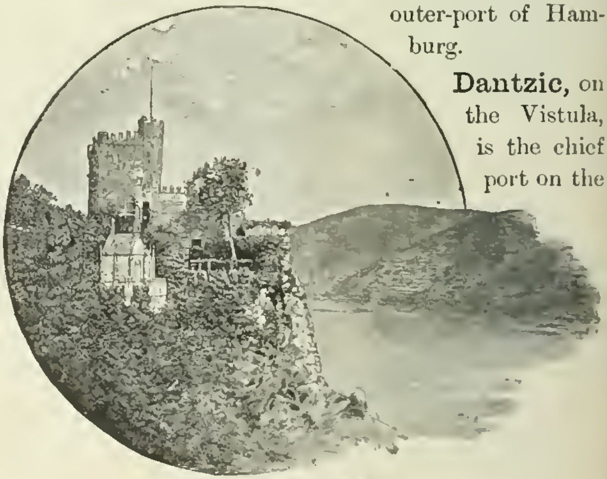
It ranks second among commercial countries. It touches every one of the great countries on the continent of Europe. Its position on the Baltic enables it to trade with the countries on this sea; its coast upon the German Ocean gives it free access to Great Britain, America, and the rest of the world. It has railroad communication with every country on the Continent. Its domestic trade is greatly facilitated by canals which connect all its navigable rivers. A great ship canal, the Kaiser Wilhelm, connects the Baltic and North Seas. It is 61 miles long and 29½ feet deep. It saves two days' time of all steamers from Hamburg to all Baltic ports, as compared with the old journey round the Skaw.

Berlin, the capital, is the third city in size in Europe. It is a great trade centre, having extensive manufactures in woollens, silks, cottons, cast-iron goods, and porcelain. It is also a noted "Residence and University City."

Leipsic is a great railroad centre. It is the greatest *fur* and *leather market* in the world; it is also the centre of the *German book trade.*

Munich and **Dresden** have great galleries of painting and sculpture. Munich is the "city of museums."

Hamburg, on the Elbe, is the fifth seaport of the world and the second city of the German Empire. At high tide the harbor has less than 25 feet of water, and the largest ships load and unload at Cuxhaven, the outer-port of Hamburg.


Castle on the Rhine.

Dantzic, on the Vistula, is the chief port on the

Baltic. It is a kind of northern Venice, canals running through its streets, and many of the houses being built on piles.

Breslau, on the Oder, is the second city of Prussia in population. It is celebrated for its *wool fair* and the manufacture of linen and woollen cloth. It is situated in the middle of the trade between the North Sea, the Baltic Sea and the basin of the Danube.

The Arch of Triumph, Paris.

Cologne, an ancient city on the Rhine, manufactures cotton, woollen, and silk fabrics, and is noted for its distilled waters called Eau de Cologne.

France.—France is one of the wealthiest countries of the world. It lies about half way between the Equator and the North Pole. It is essentially an agricultural and manufacturing country, one-half the people being directly engaged in agriculture. About seven-eighths of its soil is under careful cultivation. There are extensive vineyards in the south. Mulberry trees and the rearing of silkworms in the south, as well as poultry farming, deserve special notice. Its most important manufactures are those of silk, wine, wool, cotton, linen, iron, and leather.

France has a very extensive commerce, the fourth in the world. Situated as it is between the Atlantic and the Mediterranean, the two great commercial channels of the world, it holds a most commanding position for maritime trade.

A Street in Amsterdam.

France possesses a magnificent system of internal communication. It has more than 23,000 miles of railroad. The 150 navigable streams are connected by the best system of canals in Europe. The Languedoc Canal connects the Bay of Biscay with the Mediterranean, and effects a gain of 1,400 miles on the ocean route round the Iberian peninsula.

Paris, the capital, is the second largest city in the world It is situated on both banks of the Seine and on an island in the middle of the stream. It is noted for its art galleries and its fine buildings. People from all countries go to Paris to "shop." It is the pleasure city of Europe and America. It is the centre of the railroad systems of France and the focus of the foreign and internal trade of the country.

Havre, at the mouth of the Seine, is the port of Paris. Steamers from Havre reach nearly all great sea ports. It imports all kinds of raw materials. Among the French exports to Canada are silks, woollens, and millinery goods.

Lyons, the second city in France both in population and manufactures, at the confluence of the Rhone and Saone, is the centre of the silk manufacture. It is not far from the coal region of the Cevennes, nor from the silkworm districts of Southern France.

Marseilles is not only the largest port of France, but also the greatest commercial port on the Mediterranean. It is the chief port on the Rhone valley.

Bordeaux, on the Garonne, is the third largest port of France. The basin of the Garonne produces great quantities of grapes, and Bordeaux is the chief wine-shipping port.

Lille is in the flax-growing region of Northern France, and is near coal mines. It has large mills for the manufacture of linen cloth and thread.

Toulouse, in the vineyard district on the Garonne, lies between the Atlantic and Mediterranean, with which it is connected by canals.

BELGIUM. Belgium has valuable coal mines, and is in the flax district. Laces and linen are important manufactures in this country.

Sugar beets are a leading crop in Belgium. Here are also beds of excellent sand for glass-making.

Antwerp, the chief port, is the centre of the railroad and canal systems which reach nearly all parts of Belgium. It is the third great port of the world.

Brussels is noted for carpets and laces. **Liege** is well known for its fire-arms.

THE NETHERLANDS OR HOLLAND. The people of this country are largely engaged in dairying and in raising cereals. Holland has many colonies, among which are Java, Sumatra and Dutch Guiana. These colonies send tobacco, tea, coffee, sugar and spices to Holland.

Amsterdam and **Rotterdam** are important ports. Many skillful diamond-cutters live in these cities.

DENMARK. This country resembles Holland in its products.

Copenhagen is the capital and principal city.

12. Low Europe—Eastern Part.

The great lowland of eastern Europe is known as the *plain of Russia.* It forms with the Siberian plain the northern lowland of Eurasia. The plain of Russia stretches from the Black sea and the Caucasus mountains to the Arctic coast, and includes one half of the continent.

One of the richest petroleum fields known in the world is in the Caucasus mountains.

The northern portion of the plain of Russia consists of frozen treeless tundras like those along the Arctic coasts of America and Asia. South of the tundras lies the forest belt, which crosses the northern plain of all Eurasia.

The portion of the Russian plain known as *Finland* is very flat and contains thousands of lakes. The southern half of Finland is in the forest belt, but the northern part merges into the desolate tundras.

On the south of the forest belt are fertile treeless plains extending to the Black sea and to the salty steppes around the Caspian sea. The plains, except in the drier salty portion, yield immense crops of grain, and afford pasturage to large numbers of cattle, horses and sheep.

Through the forest belt and across the plains flows the Volga, the largest river in Europe. The Volga basin comprises about one fifth of the plain of Russia. The main river in this basin rises in marshes near the Valdai hills. These hills are only a few hundred feet above sea level, but many large rivers rise in or near them.

The Volga river, with its net-work of canals, forms the main water way through the Russian plains. It reaches almost all parts of the forest and grain districts, the mining region in the Ural mountains, the fur belt in the Dwina basin, the oil wells near the Caucasus range, and the salt beds around the Caspian sea. These water routes lead to all the border seas of the plain of Russia.

13. Mediterranean Countries.

Spain. The soil of Spain is rich in the valleys; olives, figs, lemons, and grapes grow abundantly. There are fine pasture lands on the higher lands, and sheep raising is a large industry. The mines produce iron, lead, and quicksilver. The quicksilver mines are the richest in the world. A great deal of cork is exported from Spain. The climate is very hot in the valleys.

Madrid, the capital and largest city of Spain, is in the central plateau.

Barcelona is the chief city of eastern Spain. This city exports fruits, olive oil, silk and wine. **Valencia** is noted for its fine silk manufactures. **Malaga** is a wine and fruit port.

Portugal.—The climate of Portugal is very delightful, and the soil in the river valleys is very productive. The exports are quite similar to those of Spain, especially wines, figs, olives, oranges, and lemons.

Lisbon is the principal trade centre of Portugal. This city, as well as **Oporto** farther north, has a large trade in wine and in olive oil.

Italy. The valley of the Po is very fertile; grain grows abundantly, and there is excellent pasturage. Vast quantities of wine are produced on the foothills of the Apennines. The slopes on the western side of this range have a warm climate, and are suited to the growth of oranges, lemons, grapes and other fruits. Italy is noted for its marbles and silks. The leading exports of this country are silks, wine, oil and fruits. The imports are raw cotton, sugar, coffee and other food supplies.

Naples, on the beautiful bay of the same name, is the largest city in Italy.

Rome, the capital, contains the Vatican, or residence of the Pope; and St. Peter's, the largest cathedral in the world. This city is famous for its historic ruins.

Milan is the most important city in the Po valley. **Genoa** is the chief port of northwest Italy. **Florence** and **Venice** have famous art galleries.

Turkey is a mountainous country, with wide valleys and rich plains between the mountains. The Turks have not been a very progressive people, and have not much foreign trade.

Constantinople, on the Bosporus.

Constantinople is the capital of the Ottoman Empire, including Turkey in Europe, Turkey in Asia, Egypt and Tripoli. The chief ruler, or *sultan*, is the head of the Mohammedan religion.

Greece, once the leading country in the world in power, in literature and in art, is now comparatively unimportant. It is chiefly of interest on account of its past. It has a fine climate, and its soil is very productive. Grapes, oranges, lemons, and especially currants are largely grown.

Athens, the capital of Greece, is famous for its history, and for the ruins of its ancient temples.

14. Other Countries of Europe.

Switzerland. The swift streams of this country supply good water power. Here are also mines of brown coal, or *lignite*. Raw silk is brought from Italy; cotton from the United States; flax from the countries of Low Europe. Switzerland manufactures laces, silks and cotton cloth.

Zurich is the principal manufacturing city.

Geneva is noted for its watches, clocks and music boxes.

Austria-Hungary. The fertile plain of Hungary yields grain, sugar, beets and grapes. Cattle and sheep here find good pasturage. The surrounding highlands are rich in minerals. The higher slopes are forested.

Vienna is the railroad centre of the empire, and is also a river port. This city has one of the largest and best universities in the world.

Budapest, on the Danube, is the second city in importance in this country.

It is the trade centre of the plain of Hungary.

Trieste is the principal port of the empire.

Russia.—This is the largest country in Europe. It is a vast plain, well watered by large slow-flowing rivers. It has a great range of temperature, as it extends through twenty-three degrees of latitude. The rainfall is small. The chief productions of Russia are—iron, coal, wheat and other grains, flax, hemp, and leather. Many horses and cattle are exported.

Geneva.

St. Petersburg is the capital of the Russian Empire. Railroads and canals connect this city with the productive parts of the great plain of Russia. The leading exports are wheat, flax, lumber and wool.

Moscow is the railroad centre of the empire. This city has an immense trade, not only with other parts of European Russia, but also with Siberia.

Kremlin, Moscow.

Odessa and **Riga** are important ports. The former is the largest city on the Black sea and is a famous wheat port.

Norway and Sweden.—These countries are united under one king. They form the longest peninsula in Europe. The west coast has a warmer climate than any other country in the world in so high a climate. Wheat grows as far north as 63°, oats in 68°, and barley in 70°.

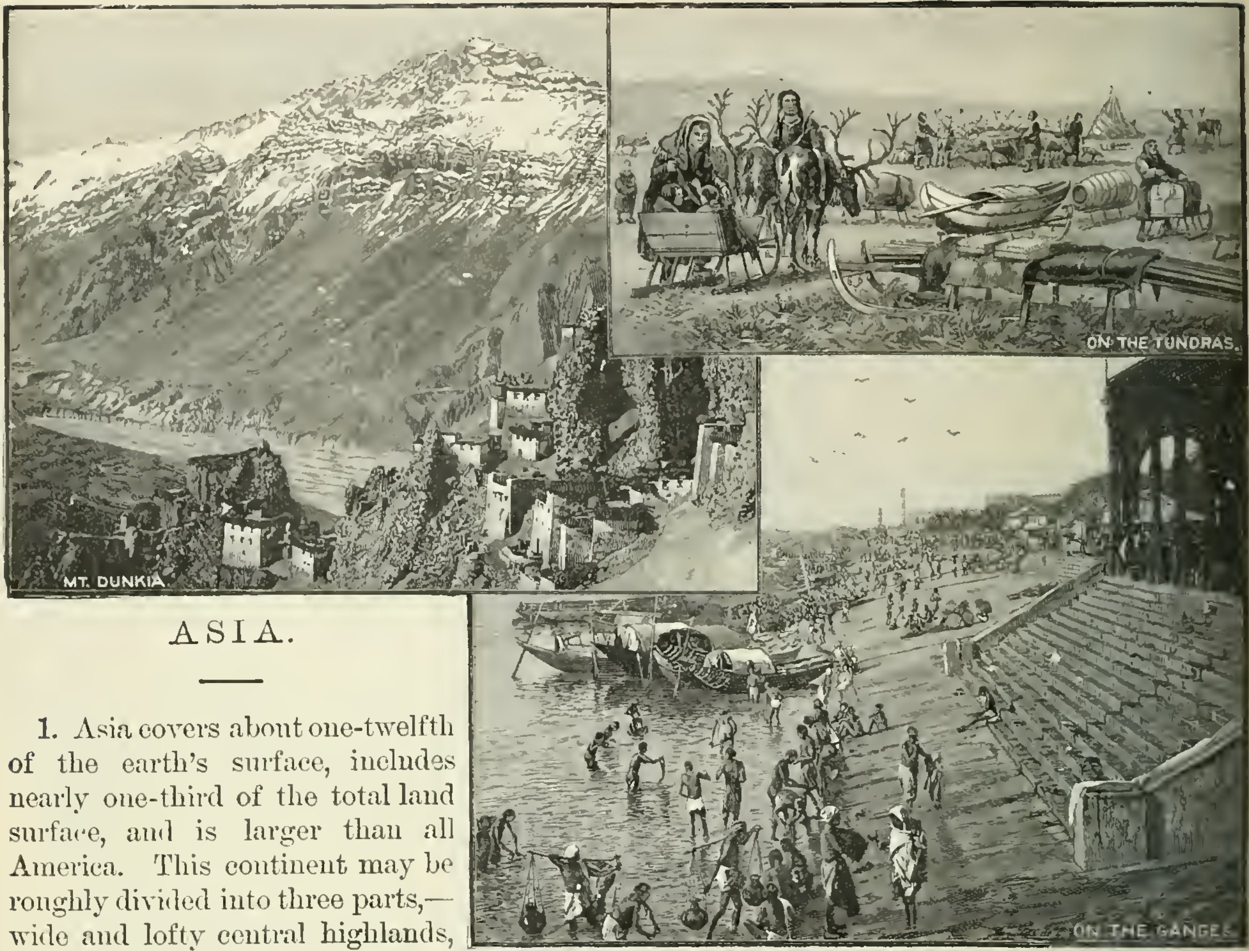
Fish, lumber, minerals, and wood-pulp for the manufacture of paper, are the chief exports.

Christiania, the capital, is the chief port of Norway. It has a large trade in lumber.

Bergen is the second port of this country.

Stockholm is the capital of Sweden. It stands on nine islands, and is noted for its beauty.

Gothenburg is the leading port. It is noted for its botanic gardens.


MT. DUNKIA.
ON THE TUNDRAS.
ON THE GANGES.

ASIA.

1. Asia covers about one-twelfth of the earth's surface, includes nearly one-third of the total land surface, and is larger than all America. This continent may be roughly divided into three parts,—wide and lofty central highlands, with broad plains on the north, and narrower plains on the east and south. The great Asian highland extends north-east and south-west.

The central part of Asia is an interior basin at a long distance from the sea. This great basin is inclosed by lofty ranges and therefore has but little rain. The northern slope is in the path of the westerly winds but is far from the Atlantic ocean. The rainfall on that slope is therefore light. Summer monsoons yield heavy rains to the south and south-east slopes of Asia.

2. The Highland of Tibet.

South of the Basin region rises the great highland of Tibet.

The rainfall of the inner part of the highland of Tibet is very light, owing to high ranges on its southern or windward border. Many of the valleys of Tibet are like those in the Great Basin of North America, but the former are much the higher. They are covered with waste from the inclosing ranges. Streams from the mountains run into the valleys, but there is not enough water to overflow and reach the sea. The lakes and marshes in these inclosed valleys are therefore salt.

Several of the lakes in the western part of the highland of Tibet are the highest in the world, being about 17,000 feet above sea level.

In some places, where the salt lakes or marshes dry away, the surface is covered with layers of white salt.

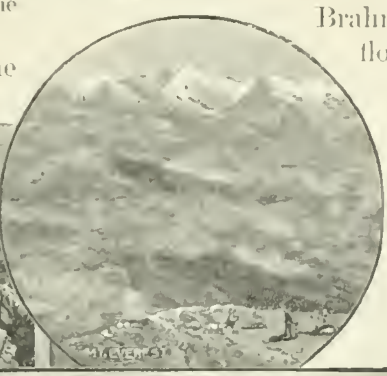
The inner part of Tibet is almost a desert. Owing to its great height it is very cold, except during the days of a short summer season. The soil is poor, and there are long periods of drought. Large herds of wild yaks and musk deer search out grassy places near the streams and on the mountain sides. Few people live in the inner part of Tibet.

Three huge mountain ranges rise above the plateau of Tibet. These are the Kuen-Lun on the north, the Karakorum on the northwest, and the Himalaya on the south.

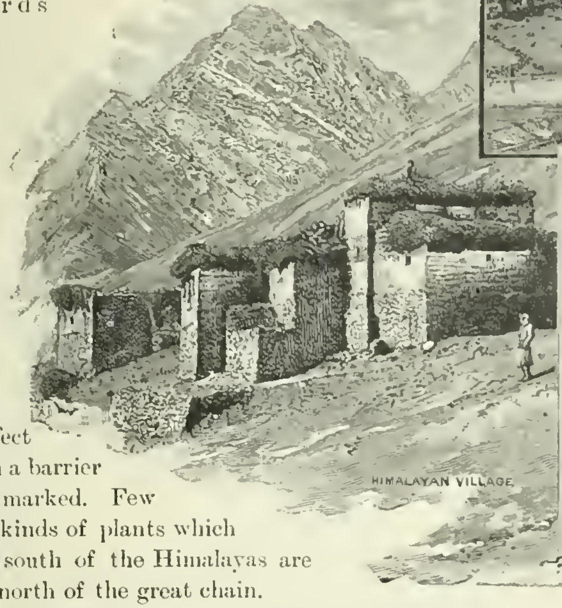
Mt. Everest is thought to be the highest peak on the earth. It rises more than five miles and a half above sea level.

The Himalayas are so lofty that they form a barrier to about one-half of the air and three-fourths of the moisture moving towards them.

CROSSING THE HIMALAYAS


MT. EVEREST

VALE OF KASHMIR


HIMALAYAN VILLAGE

LEBANON MTS., SYRIA

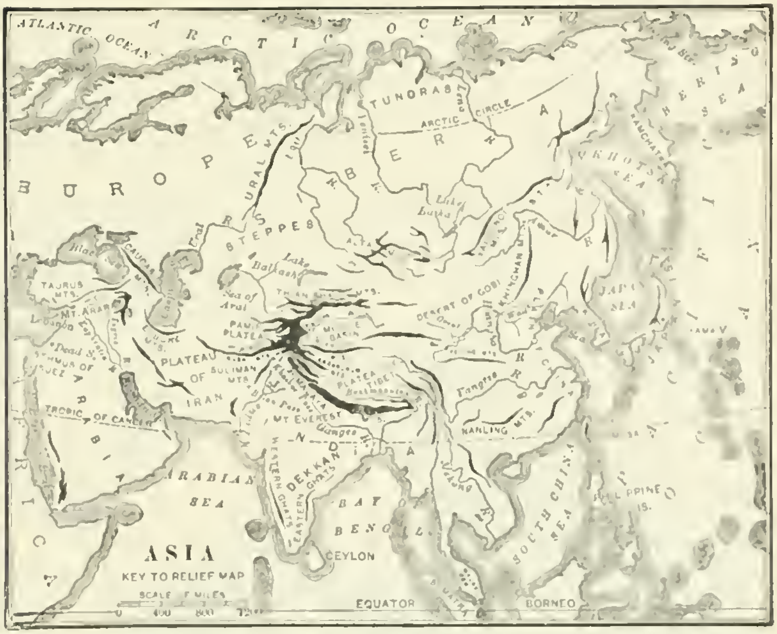
The effect of such a barrier is very marked. Few of the kinds of plants which thrive south of the Himalayas are found north of the great chain.

The Himalaya mountains separate two races of men,—the yellow people on the north and the white people on the south.

Just north of the Himalaya chain, the valleys in the plateau of Tibet are deep, because for a long time their rivers have had outlets to the sea, and have carried away a great quantity of waste from the valleys. These valleys are drained by two large rivers, the Indus and the Brahmaputra,—the one flowing westward and the other eastward behind the range, and then escaping by deep gorges that they have cut through the mountains.

The upper parts of the Indus and Brahmaputra rivers are fed chiefly by snow melting on the lofty mountains. Along the sides of these streams are found most of the people who live in the highland of Tibet.

3. Map Studies.



Which is the larger, — North America or Asia? What strait separates these continents? Name the smallest ocean lying between them. What other oceans border on Asia?

What oceans lie between North America and Asia? What sea and strait separate Alaska from Asia?

What continents lie on the west and south-west of Asia? What name is given to Europe and Asia together?

What heat belts cross Asia? Over what continent must the westerly winds blow before reaching central Asia?

Which is the coldest coast of Asia? In what direction does the main portion of the Asian highland extend? Which part of the highland looks the highest? Compare the Asian and Rocky Mountain highlands as follows: Which looks the higher? — The wider? — The longer? *See globe map, page 4.*

On which side of the Asian highland is the plain of Siberia? Name three rivers which cross this plain. In what direction is the central plain of North America longest? In what direction is the northern plain of Eurasia longest? Which of these vast plains is the larger? In which heat belts does the northern plain of Eurasia lie?

Eurasia.

Into what sea does the Amur river flow? — The Yang-tse river? Name two streams that cross the plain of China.

What river runs eastward in the plain of India?

Draw the general shape of Asia by using three or four straight lines. What is the trend of the Arctic coast? — Of the Pacific coast? — Of the Indian coast?

Sketch each of these coasts. Which is the most irregular? Which is bordered by the greatest number of islands?

What seas partly surround the peninsula of Kamchatka? — The peninsula of Korea (Corea)? — The peninsula of the Deccan? — The Arabian peninsula?

What seas or bays are separated by the peninsula of Kamchatka? Of Korea? Of Indo-China? Of Deccan? Of Arabia? Which of these peninsulas are in southern Asia?

What continents are on the west and south-west of Asia? Name two seas between Europe and Asia; a river and two mountain ranges between the same continents; a sea between Asia and Africa. What gulf is on the east of Arabia?

On which side of Tibet are the Himalaya mountains? What range is on the east of the desert of Gobi? What mountains are north-west of this desert?

Which part of Asia lies nearest the equator? In which heat belts are the three great peninsulas of southern Asia?

Locate the following islands: Borneo, Sumatra, Ceylon, the Philippine and the Japanese groups.

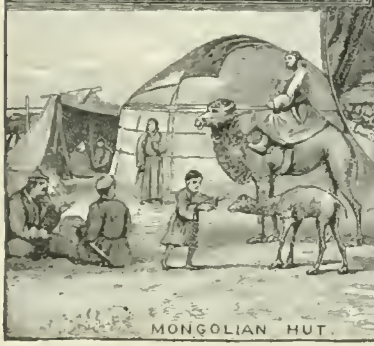
4. The Altai Highland.

From the rocky shore of Behring strait the world ridge turns to the south-west in Asia. For a long distance low ranges of mountains follow the Pacific coast.

The Yablonoi range runs into the Altai highland which extends inland towards the middle of the continent. The Altai plateau is about as high as the Great Basin in the United States.

SIBERIAN HUT

SYRIAN


MONGOLIAN HUT.

ARAB

HINDOOS

CHINAMAN

The rainfall of this far-inland region is light. Most of the rain falls on the mountain ranges.

The Altai highland, and a large part of the great plain on the north are forested with cone-bearing trees.

In the broad valleys among the ranges, grain thrives and cattle find good grass land. Most of the towns in this region are built near the foot of the mountains, where the streams can be used to irrigate the land.

5. Central Basin Region.

The dry Basin region of central Asia is south and south-east of the Altai highland. The eastern part of this almost rainless basin is called the *desert of Gobi.* The western part is the *Middle Basin.*

The Basin regions of Asia and North America are alike in many respects. They are about the same distance from the equator,—nearly half way to the north pole. Their surfaces are broken by low ranges, between which lie long troughs. None of their streams reach the sea, but all waste away, or flow into salt lakes or marshes.

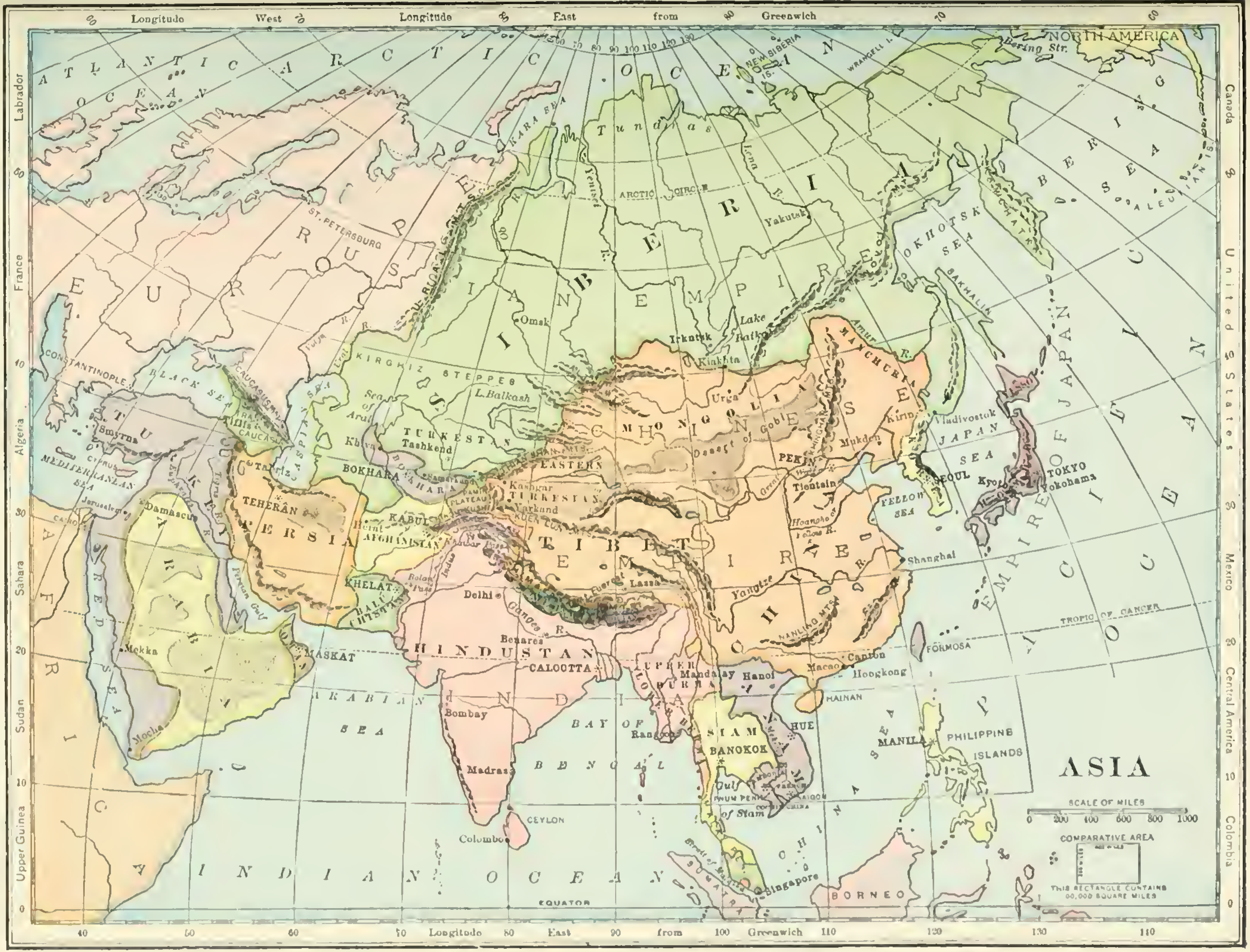
In both basins, the sides of the trough-like valleys are covered with coarse waste from the ranges, while the middle parts of the valleys receive the finer waste carried by the few streams. Strong winds that sweep over portions of the surface lay bare the rocky ledges, and drift the sand into dunes. Most of the towns are built near the mountains where the streams flow out into the open valleys. These streams are fed mostly by rain or by snow melting on the high border ranges.

Less than half the region marked *Gobi* on the maps is really a barren waste.

In eastern Gobi, summer rains sometimes last for two or three days. Grass then springs up and provides food for the camels and horses in the caravans which carry tea from China to Siberia, whence it is taken to Russia. Over a large part of the so-called *desert of Gobi*, camels and sheep eke out a living on grass and bushes.

The southern slopes of the Himalayas face moist monsoons from over the Indian ocean, and have very heavy rainfall when the south-west trade winds of summer blow.

On the east, the highland of Tibet sends long streams down the slopes of China. Several large rivers from the highland bend also to the south-east. These rivers flow in long valleys



ASIA

SCALE OF MILES
0 200 400 600 800 1000
COMPARATIVE AREA
THIS RECTANGLE CONTAINS 90,000 SQUARE MILES
Longitude West 20 Longitude East from Greenwich
Longitude East from Greenwich
Labrador
France
Algeria
Sahara
Sudan
Upper Guinea
Canada
United States
Mexico
Central America
Colombia
NORTH AMERICA
Bering Str.
WRANGELL I.
NEW SIBERIA IS.
ARCTIC OCEAN
ATLANTIC OCEAN
KARA SEA
Tundras
ARCTIC CIRCLE
Yenisei R.
Lena R.
Yakutsk
SIBERIAN EMPIRE
RUSSIAN EMPIRE
EUROPE
ST. PETERSBURG
Volga R.
Ural R.
Omsk
Irkutsk
Lake Baikal
Kiakhta
Amur R.
OKHOTSK SEA
KAMCHATKA
BERING SEA
ALEUTIAN IS.
SAKHALIN
EMPIRE OF JAPAN
PACIFIC OCEAN
MANCHURIA
Kirin
Mukden
Vladivostok
JAPAN SEA
SEOUL
Kyoto
TOKYO
Yokohama
YELLOW SEA
PEKIN
Tientsin
Hoangho R.
Yellow R.
Shanghai
CHINESE EMPIRE
MONGOLIA
Urga
Desert of Gobi
EASTERN TURKESTAN
Kashgar
Yarkand
KUEN LUN MTS.
TIBET
Lassa
Everest
HIMALAYA MTS.
Yangtze R.
NANLING MTS.
TROPIC OF CANCER
FORMOSA
Canton
Macao
Hongkong
HAINAN
Hanoi
HUE
SIAM
BANGKOK
Gulf of Siam
PNUM PENH
SAIGON
MANILA
PHILIPPINE ISLANDS
CHINA SEA
Singapore
Strait of Malacca
SUMATRA
BORNEO
EQUATOR
INDIAN OCEAN
CEYLON
Colombo
Madras
Bombay
BAY OF BENGAL
ARABIAN SEA
Rangoon
UPPER BURMA
LOWER BURMA
Mandalay
HINDUSTAN
CALCUTTA
Benares
Ganges R.
Delhi
Indus
Bolan Pass
KHELAT
BALUCHISTAN
AFGHANISTAN
KABUL
Herat
PAMIR PLATEAU
HINDU KUSH
BOKHARA
Samarkand
Khiva
TURKESTAN
Tashkend
Sea of Aral
L. Balkash
KIRGHIZ STEPPES
CASPIAN SEA
CAUCASUS MTS.
Tiflis
Tabriz
TEHERAN
PERSIA
Persian Gulf
MASKAT
ARABIA
Mekka
Mocha
Damascus
Jerusalem
RED SEA
AFRICA
CAIRO
TURKEY
Tigris R.
Euphrates R.
Smyrna
CYPRUS
MEDITERRANEAN SEA
BLACK SEA
CONSTANTINOPLE
URAL MTS.

between lofty ranges which extend into the peninsulas of southeast Asia. The mountains are heavily forested.

At the western end of the highland of Tibet stand the Pamir plateaus. We may think of this region as the mountain centre of Asia. Almost all the loftiest ranges of the continent radiate from the Pamirs.

Eastward stretch the three huge ranges of Tibet. Towards the northeast run the Thian-Shan mountains along the border of the Middle Basin. The Suliman range extends southward to the coast, and cuts off India from south-west Asia. The high Hundu-Kush chain stretches westward along the northern border of the plateau of Iran.

6. Highlands of South-west Asia.

The south-west portion of Asia is mostly a plateau region, forming part of the great Asian highland.

The plateau of Iran is about one-third as high as the plateau of Tibet. The former is almost inclosed by mountains, and is too far west to receive the rainy, summer monsoon which blows from the south-west towards the Himalayas.

The plateau of Iran resembles the Great Basin of North America. Both have small streams, salt lakes and salt swamps.

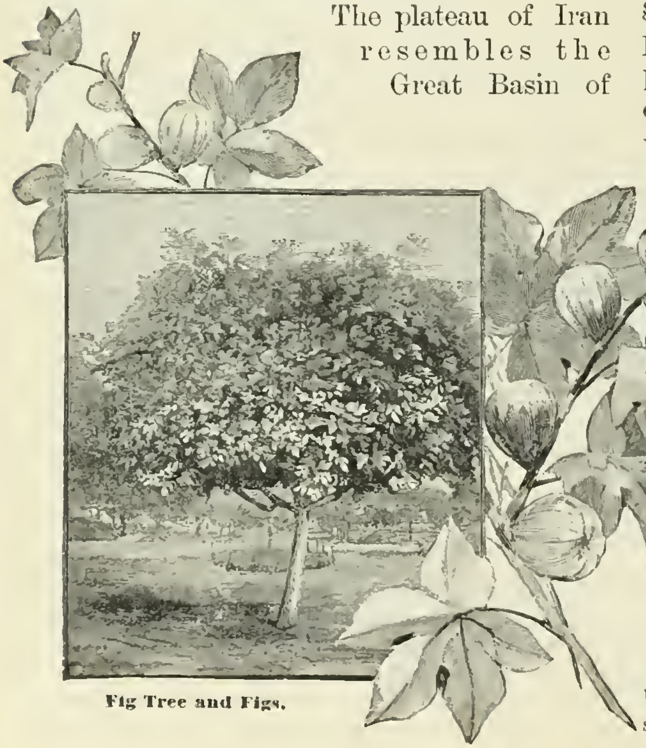


Fig Tree and Figs.

Persia occupies the greater part of the plateau of Iran, and extends from the Caspian sea to the Arabian sea.

On the plateau of Iran is a region known as the *Persian salt desert.* This covers a large area, and consists of solid salt several feet thick in most places. In some parts it is of unknown depth. Centuries must have passed while the water which has now evaporated was depositing this great bed of salt.

Khyber Pass.

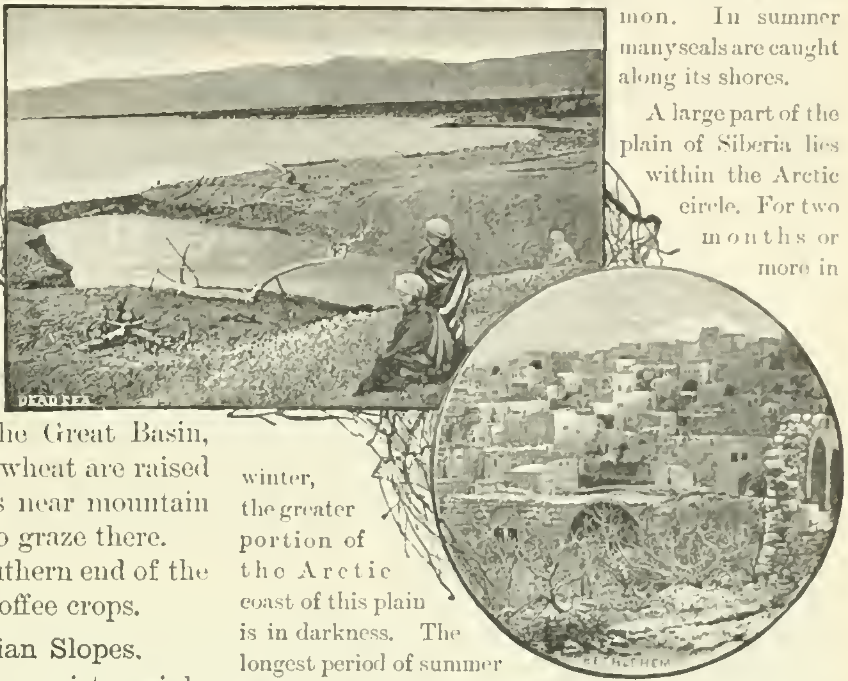
South-west of the plateau of Iran lies a small river valley sloping to the Persian gulf. The greater part of this valley consists of the flood plains of two rivers,—the Tigris and the Euphrates. Canals have been made to lead water over the plains, and some parts of them are very productive. Wheat is the leading crop. Figs and dates also thrive here.

There are many old lake basins in the region south of the Black Sea. These contain small lakes most of which have no outlets, for there is not now enough rainfall to supply more water than evaporates. Several small rivers flow down the north slope of the plateau. Mt. Ararat, in this plateau region, is a famous volcanic cone, a little more than three miles and a quarter high.

Many small but fertile slopes descend from western Asia to the Mediterranean coast. They receive light rainfall from the westerly winds. Figs, olives and grapes in large quantities are raised in this district.

The *Dead sea* is in one of the most famous valleys on the earth. The water of this sea is about ten times as salt as that in the ocean, and is also very bitter. The sea is not quite fifty miles long. Its surface is about one-fourth of a mile below the level of the ocean.

North of the Dead sea is a beautiful lake known as the *sea of Galilee*. This lake also is below the sea level, but its water is fresh because the river Jordan forms its outlet. This river also feeds it.



The Jordan and the two lakes are in one long valley. It is shut in by high land on both sides. One low range near the south-west shore of the Dead sea contains a deposit of rock salt about six miles in length.

The peninsula of Arabia is mostly a desert plateau. In many respects it resembles the Great Basin, but is much drier. Dates and wheat are raised in some of the narrow valleys near mountain ranges. Camels and horses also graze there.

The hilly slopes near the southern end of the Red sea are famous for their coffee crops.

7. The Arctic and Caspian Slopes.

The northern part of Eurasia consists mainly of a broad low coastal plain. The Ural mountains run north and south across the plain and form a part of the boundary between Asia and Europe. The Arctic lowland in Asia is known as the *plain of Siberia*. Nearly all of this plain is in the basins of three large river systems.

Cedar of Lebanon.

Lake Baikal is the largest body of fresh water in Asia, but it is not quite half so large as Lake Superior. The water of this lake is very deep, and it abounds in salmon. In summer many seals are caught along its shores.

A large part of the plain of Siberia lies within the Arctic circle. For two months or more in winter, the greater portion of the Arctic coast of this plain is in darkness. The longest period of summer daylight lasts for an equal length of time. South of the Arctic circle, in all parts of the Siberian lowland, the summer days are long and the winter days are short.

Being far from the equator and far inland from the warmer oceans, the plain of Siberia has long and very cold winters. The summers are short. They are cool in the northern part of the plain, but warm in the southern part.

The map of the heat belts, pages 23 and 24, shows how far south the cold belt extends in Siberia. There, in the lower part of the Lena basin, is the coldest winter region known in the world. The extreme cold is due to the fact that the region is far inland from the warmer oceans, that the winter nights are long, and that warm winds from the far south cannot cross the great central highland.

Along the Arctic coast of Siberia are mossy, marshy plains called *tundras*. They resemble the marshy plains along the Arctic coast of North America.

In summer large herds of reindeer visit the tundras to feed on reindeer moss. White bears and seals are seen along the Arctic shore, but both the plant and the animal life are scanty. The region is dreary and desolate, except for a few weeks in summer.

South of the tundras, as in North America, lie the forest plains. Most of the trees are cone-bearers,—larch, fir and pine. The forest belt crosses northern Eurasia, from the Pacific ocean to the Atlantic. In Asia the forests extend southward to the border of the desert of Gobi, the Middle Basin, and the dry plains around the Caspian sea.

In the Obi basin, east of the Ural Mountains, the growth of trees is very dense. Here the forested swamps cover many thousand square miles.

The forest belt is broken in many places by wide open plains. In the warmer parts of the Siberian river basins, the plains yield harvests of wheat, rye, and oats.

Along the southern border of the forest belt, the open plains, or *steppes*, are covered with fine, fertile soil. Large crops of grain are raised, and many cattle, sheep and horses graze on the plains.

The south-west part of the northern plain of Asia is drained towards the Caspian and Aral seas. As the region is low and far inland, it has only light rainfall, and is therefore almost treeless.

The grass in any one part of this region is not plentiful enough to support the cattle and sheep. The people therefore wander with their herds from place to place, living in tents and carrying all their possessions with them. Such wandering people are called *nomads*.

East of the Caspian Sea the plain is desert-like and barren, except where streams from the mountains are led aside in canals to irrigate the land.

The surface of the Caspian sea is lower than the level of the ocean, but the surface of the Aral sea is higher. Both these seas are salt.

The Caspian sea is more than four times as large as Lake Superior.

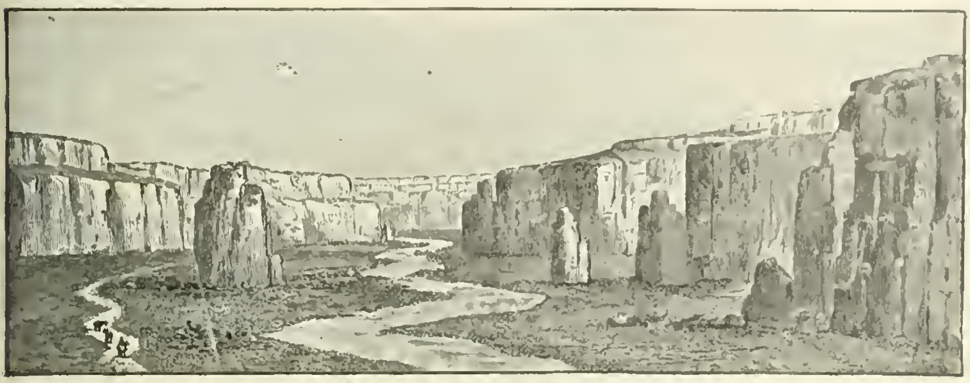
8. The Pacific Slope.

From Behring strait to the Amur basin, the east slope of Asia is very narrow, and therefore has no large streams.

The Amur river is the natural highway from the Altai plateau to the Pacific coast. The basin of this stream is so far from the equator that the winters are long and severe. The region is thinly settled and is largely overgrown with forests.

The south-east slopes of Asia, including the basins of the Yellow and Yang-tse rivers, are watered partly by rains from the summer monsoon, and partly from winter storms. The summer rains are much the more abundant.

The great delta plain of China is made of soil carried down by the Yellow and Yang-tse rivers,—mostly by the former. This delta plain contains many thousand square miles, and is one of the most thickly settled regions in the world.



Loess Beds, Yellow River Basin, China.

Above the delta plain, the Yellow river flows through a district covered with deep, yellowish soil. This was brought as dust by the winds from the dry inland Basin region. The area covered by this soil is far greater than than that of the lava plains of the Columbia plateau region.

In some places the yellowish soil, called *loess*, is hundreds of feet in depth. It fills valleys, buries hills, and rises far up the slopes of the mountain ranges. Rivers have cut deep valleys in it, and in the sides of the valleys, at points which the streams no longer reach, millions of Chinese people have dug caves for homes. This soil is very fertile, and gardens cover a large part of the region.

The Yellow river has carried down countless tons of the yellowish soil, and has made of it the larger part of the great delta plain of China. Each year the plain grows farther into the sea, for no ocean current strong enough to carry away the silt sweeps past the mouth of the river. Cities in China that were once seaports are now far inland.

The Yellow river takes its name from the yellowish soil which discolors the water. This river performs its chief work in making delta lands, for it is of little use to steamers entering from the sea. The current in some places is very swift, and numerous bars form not only at the mouth of the river, but also far upstream.

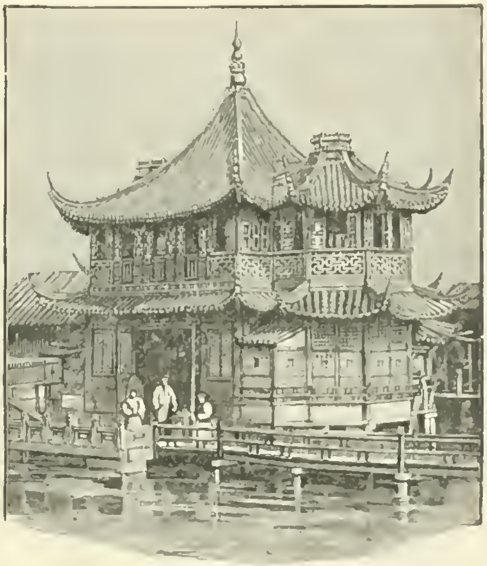
As the river has changed its course, and as it is hardly navigable, only a few large cities have grown up along its banks.

The Yang-tse river has built the southern part of the great delta plain of China. This stream forms the best waterway on the eastern slope of Asia, and is open to large steamers for more than a thousand miles from the ocean. Many of the greatest cities in China have grown up on the banks of the Yang-tse river.

Above the delta plain, for a long distance inland, the basins of the Yellow and Yang-tse rivers are rolling or hilly. The western portions of the great basins are in the mountainous regions of Tibet.

The leading exports from China are tea and silk. Rice and a grain called *millet* are among the chief food products.

Canals extend almost the whole width of the great delta plain of China, and form fine waterways. They supply water also for large tracts of land on which rice and other products are raised. A large inland trade is carried on by way of these canals and rivers.



Chinese Tea House.

More than two thousand years ago, a high and wide wall was built along the former boundary of China, to shut out fierce Tartar tribes on the north. The wall runs for more than a thousand miles over mountains and through wide valleys. Many parts of the great wall are now crumbling to ruins.

China contains about one-fourth of the people in the world. The Chinese belong to the yellow race.

From the Tibetan highland long mountain ranges extend into the great peninsula of Indo-China. Swift streams flow in the valleys between these ranges. The longest of the streams is the Mekong river.

The course of the Mekong is in many places broken by rapids. The river is therefore not open to navigation, except for about three hundred miles from its mouth. The Mekong is building a delta plain, but it is not nearly so large as the delta plain of the Yellow river.

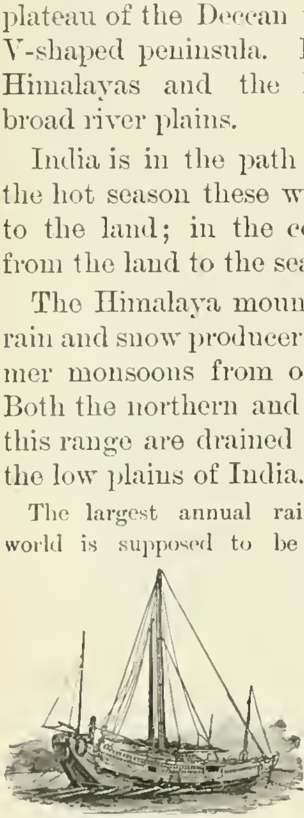
9. India.

The great country of India is bordered on the north by the Himalayas. In the south it contains the plateau of the Deccan in the large V-shaped peninsula. Between the Himalayas and the Deccan are broad river plains.

India is in the path of the monsoons. In the hot season these winds blow from the sea to the land; in the colder season they blow from the land to the sea.

The Himalaya mountains form the greatest rain and snow producer in the path of the summer monsoons from over the Indian Ocean. Both the northern and the southern slopes of this range are drained by rivers that flow into the low plains of India.

The largest annual rainfall in any part of the world is supposed to be at the town of Cherrapunji, in the mountains, about two hundred miles north of the bay of Bengal. This town is a little more than 4,000 feet above sea level, and is walled in on the north by steep ranges rising 2,000 feet higher.



A Chinese Junk.

Most of the rivers of the plain of India are included in three systems,—the Indus on the west, the Brahmaputra on the east, and the Ganges in the middle part.

These three river basins are in the warm belt and also in the path of the moist south-west monsoons. The climate is therefore hot or warm most of the year. The heavy rains fall while the summer monsoon lasts. The dry season occurs when the winds blow from the land to the sea.

Tea Farm.

The upper portion of the Indus lowland, near the foot of the Himalayas, is well watered, and is the richest wheat region in India. The lower part of this river basin is a desert.

The plain of northern India, like that of the valley of California, is formed of land waste brought by the rivers from the mountains. Many branches of the Ganges rise in the southern slope of the Himalayas.

The Ganges system has built very large flood plains, sloping only a few inches to the mile. In the rainy season these plains are flooded far and wide, thus receiving fresh soil from the highland slopes. The Ganges and Brahmaputra rivers unite in making a large delta plain crossed by a great network of distributaries.

The plains of the Ganges basin are carefully irrigated by means of canals and ditches leading from the rivers. The rainfall of the summer season is thus made to serve through the entire year, often through long periods of drought.

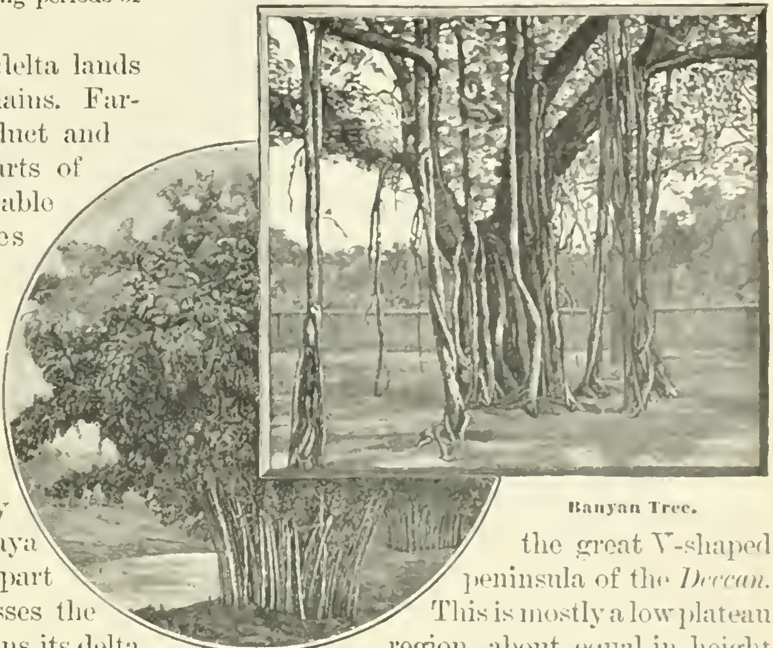
Rice is the leading crop in the delta lands and in the lower parts of the flood plains. Farther inland, *millet* is the chief product and is the staple food in nearly all parts of India Cotton is the most valuable article of export from the Ganges plain.

The Ganges river is navigable for more than a thousand miles through its great flood plains, and is alive with boats carrying products from place to place.

The Brahmaputra river, like the Indus, flows in a deep inland valley on the north flank of the Himalaya range. Cutting through the eastern part of the range, the Brahmaputra crosses the low plain of northeast India, and joins its delta with that of the Ganges river. This great double delta is slowly growing southward into the bay of Bengal.

The lowlands of northern India, except the desert region of the lower Indus, are densely peopled. These lowlands, together with the V-shaped peninsula on the south, support about one-fifth of the people in the world. Most of the natives are called *Hindus*. They belong to the white race.

Working Elephant.


Banyan Tree.

Bamboo.

Southward from the Ganges basin extends the great V-shaped peninsula of the *Deccan*. This is mostly a low plateau region, about equal in height to the Appalachian highland. The peninsula has low ranges facing the sea on both sides, and is partly separated from the rest of India by a hilly range on the north. Within the triangle thus formed, about 100,000,000 people now have their homes,—many more than dwell in North America.

The lava-flows of the Deccan peninsula have been fully as great as those in and around the Columbia plateau. In each case the molten rock covered many thousand square miles. The Deccan lava-flows are much the older and the more deeply cut by valleys. The surface is finely weathered, making dark soil that is very fertile.

10. Asiatic Islands.

Long curving chains of islands lie east and southeast of Asia, and partly inclose large border seas. These islands contain hundreds of volcanoes, many of which are now active.

The large islands in the Japan group consist mainly of old volcanic hilly country, but there are also many wide plains. Tea, grain, and the mulberry tree are raised in the uplands, while nearly all the lowlands are used for rice fields. Two crops of rice are taken from the fields each year.

A coarse grass-like plant called *bamboo* grows in Japan, as well as in most parts of south-east Asia and the border islands. Bamboo is also found in other warm lands. The hollow jointed stems grow to the height of forty or fifty feet, but some stems are more than seventy feet high.

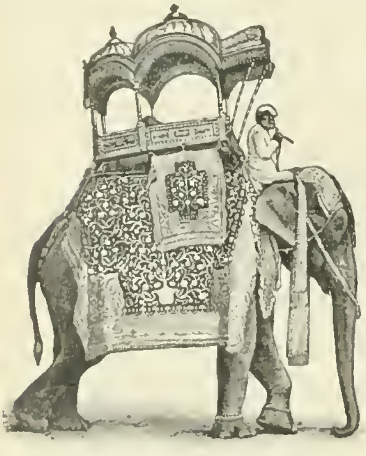
Houses and boats are made of bamboo stems. The seeds and tender shoots are served as food, on dishes formed from the joints of the stalks. The softer parts of the stalks are beaten into pulp, and are used in making paper. Strips of bamboo are made into baskets, chairs, beds and various other articles.

A Hindu.

Java, Sumatra, Borneo, Celebes, the Philippines and many other islands south-east of Asia are often called the *East Indies*.

Thousands of years ago these islands were probably connected with Asia. The seas around them are mostly shallow, and the broken coastlines formed by the drowning of valleys show that the land has settled.

The groups of Islands in the East Indies have a hot climate and abundant rainfall. Their soil is therefore very productive. Sugar, coffee, tea, spices and rice in large quantities are raised on these islands, but chiefly in Java.



State Elephant, India.

The *banyan* tree is found in some parts of the East Indies, and on the mainland of south-east Asia. The branches of this tree send down shoots that take root in the ground. These shoots also branch, and the new branches send down other shoots. A single tree may thus spread and form a grove covering several acres.

Java is the most productive and the most densely populated island of the East Indies. This one small island supports a population equal to about four times that of Canada.

Most of the people in the East Indies belong to the brown race. Many white people from Europe have settled along the coasts of the islands, especially in the seaports. Nearly all the islands are claimed by nations in Europe.

Sumatra consists mainly of a mountain region along its south-west coast, and broad lowlands stretching from this highland to the north-east coast. The rivers which cross this lowland are building great deltas. Coffee and sugar are valuable exports.

Borneo is one of the largest islands in the world. Its area is equal to nearly one-tenth that of Canada. This great island has a central plateau from which several ranges branch into the coastal lowland.

The Philippine group consists of more than 1,000 islands. In the more rugged portions of these islands are found thousands of dwarf people called *Negritos*. The more fertile lands are held by Malay people who have driven off the Negritos. There are also many Chinese and some white settlers,—the latter being chiefly Spaniards. Rice is the staple food of the people.

Large quantities of sugar, hemp, and tobacco are raised on these islands, and are the most valuable exports from Manilla, the chief seaport.

Cart drawn by Zebus, India.

11. Countries of Asia.

India.—The Empire of India consists of twelve Provinces directly governed by the British, and about one hundred and fifty States under native rulers who acknowledge the sovereignty of the British Crown. It is one of the most interesting countries in the world. Its civilization is one of the oldest, and its literature is one of the most ancient.

This country trades chiefly with Great Britain, China, Italy, France, and the United States. The most valuable exports from India are cotton and cotton seed, wheat, rice, opium, jute, tea and indigo. The principal imports are cotton cloth and hardware. The yearly exports amount to $425,000,000 and the imports to about $310,000,000. There are more than 5,000 vessels engaged in the Indian trade.

Bombay and **Calcutta** are the greatest seaports of India. Calcutta, the capital of India, is on the Hoogly river, in the Ganges delta. The city is the principal shipping-point for the produce of the Ganges and the Brahmaputra basins. Railroads, rivers and canals form the inland highways of trade to and from this great port. No large rivers carry products to Bombay, but the city is reached by railroads from nearly all parts of India. This port owes its rapid growth largely to its situation on the west coast, much nearer than Calcutta to the Suez canal and the British Isles.

COTTON GREEN, BOMBAY.

Madras is the largest sea-port of southern India.

Benares is the chief seat of the Hindu religion, and is one of the oldest cities in the world. In this holy city of the Hindus, the north bank of the Ganges is lined with great temples.

Rangun is the chief port of Burmese India. This city has a large trade in rice.

Delhi and **Mandalay** are large centres of trade in India.

French Indo-China. French Indo-China includes Anam, Cochin-China, Cambodia, and other provinces. All these are under the control of France.

The products of French Indo-China are similar to those of British India. **Hanoi, Hué, Saïgon** and **Pnompenh** are the chief centres of trade.

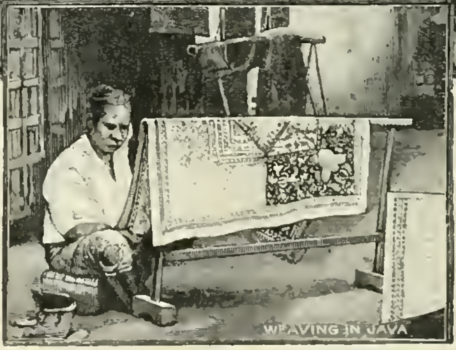
Siam. This country is ruled by a native king,—an absolute monarch. The resources of the country are poorly developed. Teak and rice are the principal products. **Bangkok** is the chief city.

East Indies. Sumatra, Java, Celebes, and middle and southern Borneo are possessions of Holland. They are called the *Dutch East Indies.* North-west Borneo is under the control of Great Britain. The United States controls the Philippine islands.

China.—This great country is larger than the whole of Europe. The people have lived apart from other nations, and have preserved distinct manners and customs. Recently, England, Russia, France and Germany have obtained enlarged treaties with China, so that the country is being opened up rapidly to foreign trade. The British nation controls the greater part of China's foreign trade. The island of Hongkong, on the coast of China, is a British colony. It exports Chinese tea and silk; and imports opium, cotton cloth, sugar and flour for the great empire near by.

DYAKS OF BORNEO

STREET IN JAVA


WEAVING IN JAVA

Canada imports tea and silk from China,—chiefly from the ports of **Shanghai**, **Canton** and **Fuchau**.

Peking, the capital, and Canton are the largest cities in the Chinese Empire.

Yarkand is in the principal oasis of the province of Eastern Turkestan. **Lassa** is the chief city of Tibet.

Japan.—Japan is the only limited monarchy in Asia, having its own ruler. All the other independent countries are absolute monarchies.

Japan is often called the "Great Britain of the Pacific." It resembles Great Britain in many respects, chiefly in its insular position and its naval power.

The exports of Japan are taken from its rice swamps, its silk-worm nurseries, and its tea farms. The imports are mostly cloth, metal goods, and petroleum. Japanese trade is carried on chiefly with Great Britain and the United States.

Japan is the most progressive of Asiatic countries. The Japanese have good schools, railway and telegraph lines, and large manufactories. Among the latter are iron foundries, glass-works, paper mills, cotton and silk mills. The people of Japan are noted for the weaving of silk and the carving of ivory.

Tokyo is the capital and the commercial centre of Japan. Only two cities in America are larger than Tokyo.

Yokohama, on the bay of Tokyo, is the chief sea-port.

Osaka is an important manufacturing city. **Kioto** is surrounded by a great number of Buddhist temples.

Korea.—The Japanese have recently won for Korea its freedom from Chinese authority. The foreign trade of this country is small, and is mostly in the hands of the Japanese. **Seoul** is the chief city of Korea.

By the terms of the China-Japanese treaty of 1895, Korea was made an independent kingdom,—an absolute monarchy.

Russia in Asia.—Siberia and Trans-Caucasia* are parts of the great Russian Empire, which comprises about one-seventh of the land surface of the earth. Bokhara and Khiva also are under the control of Russia.

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* Note.—Trans-Caucasia is the name of the Asiatic portion of the large Russian province of Caucasus, lying on both sides of the Caucasus mountains.

Tashkent, the largest city in Asiatic Russia, is in a district made fertile by irrigation. **Tiflis** is a city through which Russia conducts a large part of its trade with Persia and other countries of south-west Asia. The railroad which carries great quantities of petroleum from **Baku** to the port of **Batum** passes through Tiflis.

Irkutsk and **Vladivostok** are centres of Siberian trade. The latter city is the Pacific port of Siberia. The Russians have recently got permission to cross the north-east part of China to secure a winter port for the terminus of the Siberian railroad, one of the greatest railroads in the world, which has recently been constructed by Russia.

PERSIA.—This country occupies the western part of the plateau of Iran, and is about 5,000 feet above the sea. Cereals and the opium-poppy grow in the fertile portions of Persia, chiefly in the districts near the Caspian sea. Many sheep are reared in the highland regions. Dates thrive along the coast, and pearls are obtained from the border waters on the south. The Persians are famous for their hand-made carpets and rugs.

Mikado's Palace, Japan.

Teherân and **Tabriz** are the principal cities.

AFGHANISTAN is a very mountainous country. The people are divided into about 400 tribes. The country is important to the British because it controls the passes that are the gateways to India from the north-west. This country is crossed by the caravan routes that lead into India. **Kabul** is the chief city.

BALUCHISTAN is little more than a province of India. It is a rough plateau, with little fertile soil. The people of this rugged country are mostly shepherds. **Khelat** is the largest city.

ASIATIC TURKEY. Turkey now controls the portion of Arabia lying along the Red Sea, and most of the Arabian territory on the Persian Gulf.

Smyrna is the largest city and port of Asiatic Turkey. **Damascus** has an extensive caravan trade with the Arabs. The products of this country are similar to those of Persia, but the Red sea coast is famous for its coffee. **Mocha** is the chief port for the shipment of this coffee. Mohammed was born in **Mecca** (Mekka).

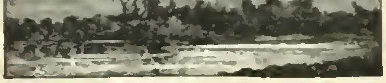
Jerusalem is famous for its religious history.

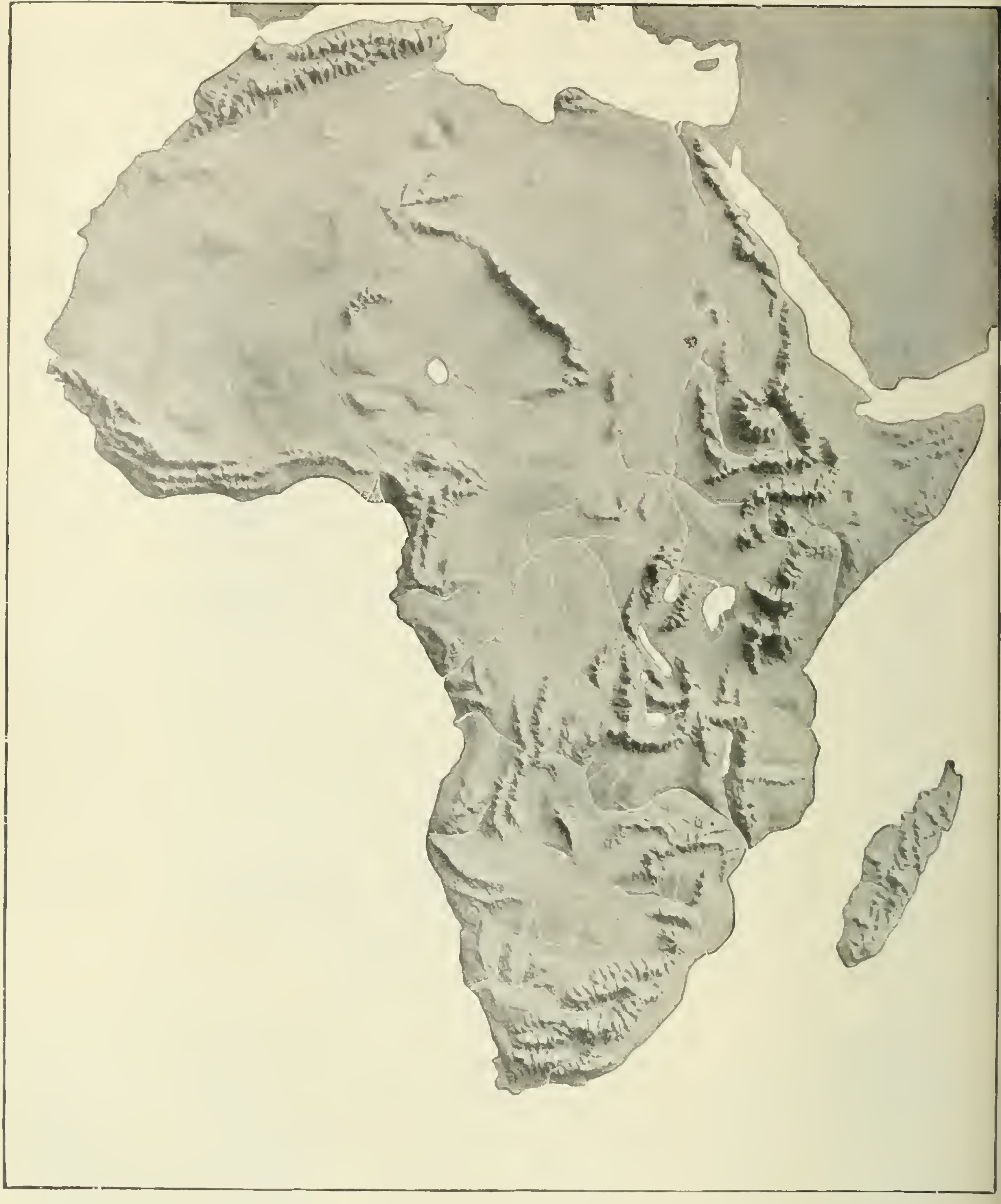
ARABIA.—This country is the largest peninsula in the world. It is nearly one-third as large as Canada. Its population is about the same as that of Canada. The Turks control the chief coasts on the Red Sea and Persian Gulf; the English own the island of Perim and Aden, controlling the entrance to the Red Sea. Aden is a very important city. It has a strong fort and does a large trade.

Arabia, like Persia and Turkey, is a Mohammedan country.

OMAN is an independent Arabian State.

Maskat, the capital, exports dates, and imports rice.


Fusiyama, Japan.



RELIEF MAP OF AFRICA.

1. Map Studies.

Note: Now that we have studied four continents, we should be able to *read maps*, without the aid of many questions.

Describe the position of Africa with regard to the other continents and the oceans.

Sketch the map of Africa. Which of the continents that we have studied does it most closely resemble?

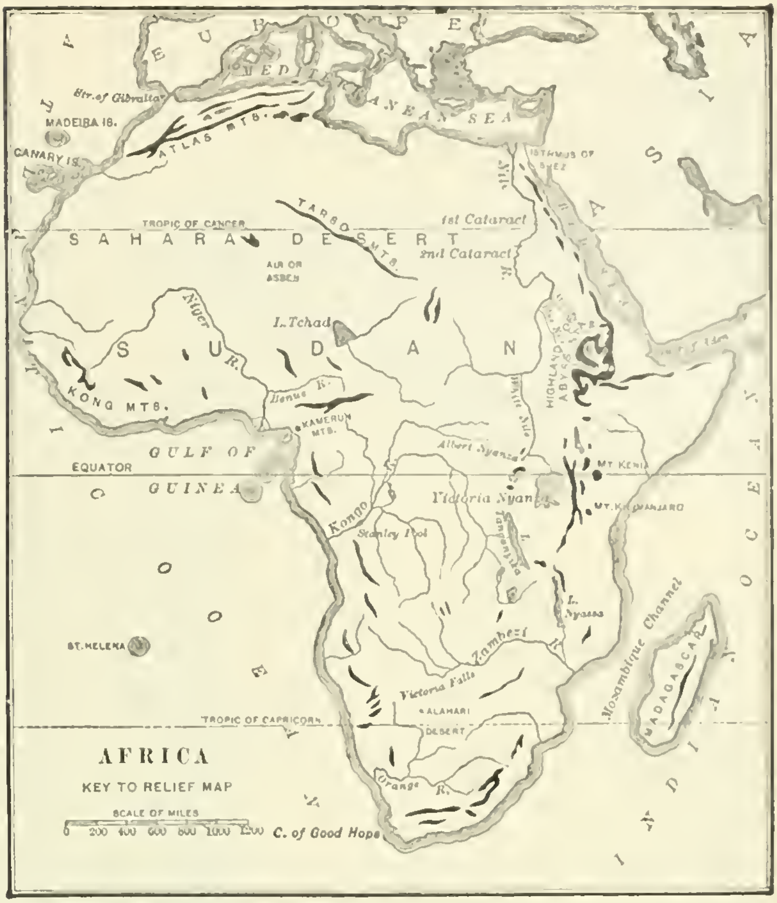
How does Africa compare in size with North America? With Asia? *Compare maps on pages 4 and 5.*

What does the relief map show about the surface of Africa? Describe the course of five large rivers in this continent.

Refer to the maps on pages 15, 19, 23 and 24, and tell what you can about the heat belts and seasons in Africa,—the winds which carry moisture to it,—and the ocean currents which reach its shores.

In what respects is Africa like any other continent? In what respects does Africa differ from each of the other continents?

What seas almost sever Africa from Eurasia? What isthmus connects the two land masses?



Name two Nile branches that rise on the highland of Abyssinia.

Where is Lake Victoria (Victoria Nyanza)? On which side of the equator does the greater part of this lake lie?

Describe the Nile basin. What part of this basin is in Egypt?—In Nubia? What European nation claims the region about the highland of Abyssinia?

Where is Tripoli? Where is Morocco? Describe the Sahara. In what respect does the Sudan differ from the Sahara? *See page 195.*

Locate Liberia and Sierra Leone. What nation claims the region stretching north-eastward from Liberia to the Mediterranean sea?

What state or country comprises the greater part of the Congo basin? Between what two European claims is Lake Victoria? What lake partly separates Congo State from German East Africa? Where is the territory known as the French Congo?

What European nation claims a broad coastal belt on both sides of the lower Zambezi? What name is given to the middle region of the Zambezi basin? What European nation controls Zambezi and Cape Colony?

Describe the surface of Cape Colony. Locate the Orange River Colony.

What colony is on the north of the Orange River Colony?

Locate Madeira, the Canary and Mauritius islands. For what is St. Helena noted?

Locate Zanzibar, Tananarivo, Mozambique.

Locate the parts of Africa claimed by Italy, Germany, Spain, and Portugal.

Date Palm.

ON THE NILE

SPHINX AND PYRAMIDS

ATLAS MTS.

AFRICA.

2. General View of Africa Physically.

A deep and wide canal, about one hundred miles long, has been dug across the isthmus of Suez. The canal has no locks, for the two seas which it connects are on about the same level.

Before the Suez canal was made, the water route from all ports in Europe to India led around the Cape of Good Hope. Vessels can now go through the canal and thus save about 4,000 miles in the voyage. Port Said is at the Mediterranean end of the canal.

Africa has a rounded outline, broken by very few bays. Almost the entire continent is a highland. Its average height above sea level is double that of Europe. The southern half is higher than the northern, and the eastern part is higher than the western. The coastal plains are very narrow, because the border ranges of the highland lie near the sea. Almost all parts of the continent inland from the coast ranges consist of plateaus.

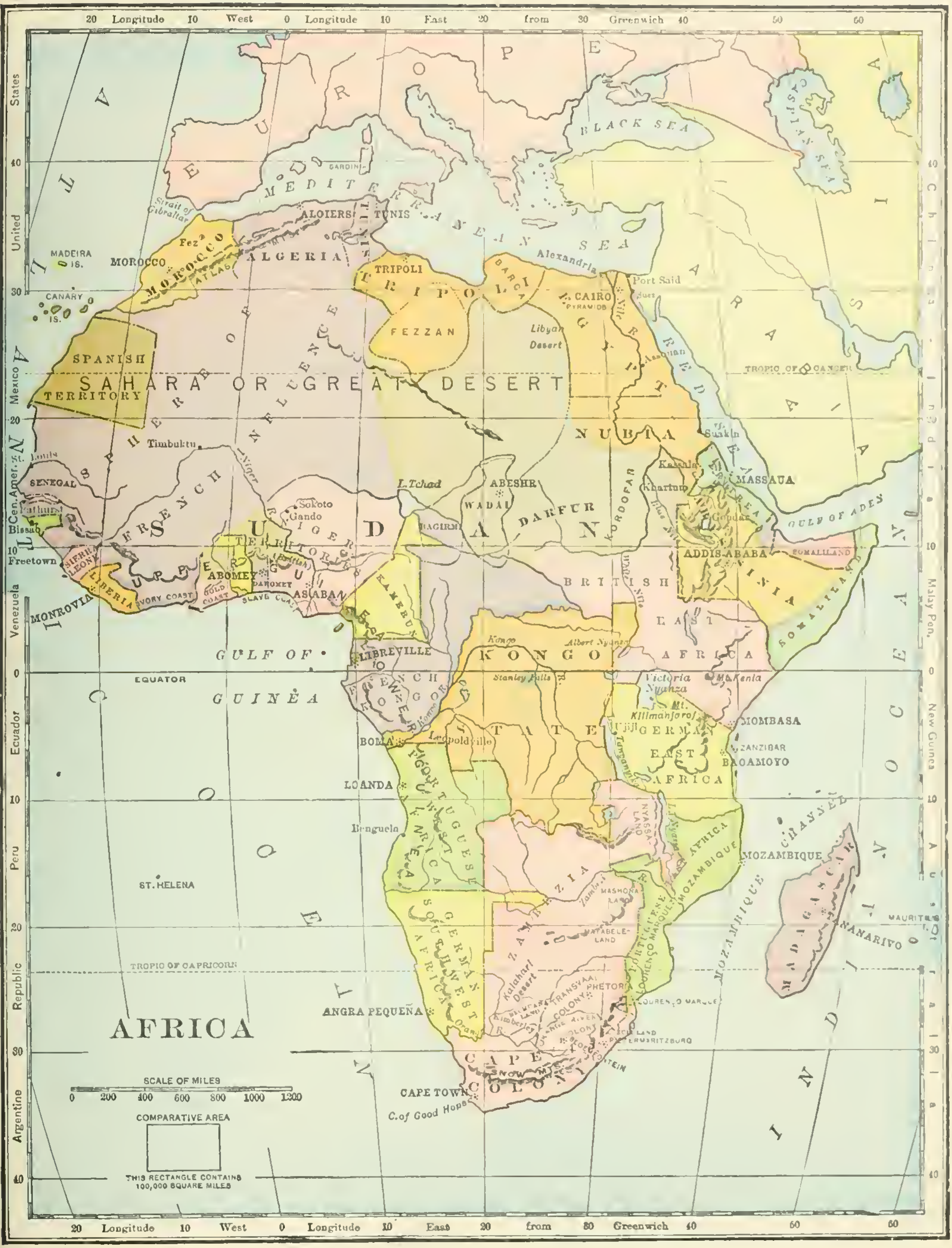
All the great rivers of this continent have falls or rapids, and not a stream is open very far inland to large vessels from the sea. Great areas in Africa are deserts. The coastal regions near the equator are very unhealthy. For these and other reasons, large parts of Africa are still little known.

Africa is the hottest of the continents. Only the extreme southern part of this great land mass is in the cool belt.

The Sahara desert is swept by the north-east trade winds. Their effect is very drying, because they blow mostly from over wide land areas, and gradually become warmer as they approach the heat equator.

At the north and south ends of the continent, the highland slopes facing the sea receive winter rains when the trade winds shift towards the equator, and the storms of the westerly winds reach those parts of the continent. The summers are dry.

Because of this arrangement of winds and rains, Africa has a wide forest belt across its equatorial region, where the rains are frequent and heavy. On both sides of this belt, the


AFRICA
20 Longitude 10 West 0 Longitude 10 East 20 from 30 Greenwich 40 50 60
EUROPE
BLACK SEA
CASPIAN SEA
MEDITERRANEAN SEA
SARDINIA
Strait of Gibraltar
MADEIRA IS.
CANARY IS.
MOROCCO
Fez
ATLAS
ALGIERS
ALGERIA
TUNIS
TUNIS
TRIPOLI
TRIPOLI
BARCA
FEZZAN
Alexandria
Port Said
Suez
CAIRO
PYRAMIDS
EGYPT
Nile R.
Assuan
Libyan Desert
SPANISH TERRITORY
SAHARA OR GREAT DESERT
FRENCH SPHERE OF INFLUENCE
TROPIC OF CANCER
ARABIA
RED SEA
NUBIA
Suakin
Kassala
Khartum
MASSAUA
ERITREA
Gondar
ABYSSINIA
ADDIS ABABA
GULF OF ADEN
SOMALILAND
SOMALILAND
Timbuktu
St. Louis
SENEGAL
Bathurst
Bissau
Freetown
SIERRA LEONE
LIBERIA
MONROVIA
IVORY COAST
GOLD COAST
ABOMEY
DAHOMEY
SLAVE COAST
ASABA
Niger
FRENCH SUDAN
UPPER GUINEA
TERRITORIES (British)
NIGER
Sokoto
Gando
L. Tchad
BAGIRMI
ABESHR
WADAI
DARFUR
KORDOFAN
Blue Nile
White Nile
KAMERUN
BRITISH EAST AFRICA
Kongo
Albert Nyanza
KONGO STATE
Stanley Falls
LIBREVILLE
FRENCH KONGO
LOWER GUINEA
GULF OF GUINEA
EQUATOR
Victoria Nyanza
Mt. Kenia
Mt. Kilimanjaro
Ujiji
GERMAN EAST AFRICA
Tanganyika
MOMBASA
ZANZIBAR
BAGAMOYO
BOMA
Leopoldville
LOANDA
Benguela
PORTUGUESE WEST AFRICA
NYASSA LAND
L. Nyassa
AFRICA
MOZAMBIQUE
MOZAMBIQUE
MOZAMBIQUE CHANNEL
MADAGASCAR
ANANARIVO
MAURITIUS
ZAMBEZIA
Zambezi
MASHONA LAND
MATABELE LAND
PORTUGUESE
ST. HELENA
GERMAN SOUTHWEST AFRICA
ZAMBEZIA
Kalahari Desert
BECHUANA LAND
TRANSVAAL
PRETORIA
ORANGE RIVER COLONY
Kimberley
Orange R.
LOURENÇO MARQUES
NATAL
ZULULAND
PIETERMARITZBURG
BLOEMFONTEIN
ANGRA PEQUEÑA
CAPE COLONY
SNOW MTS.
CAPE TOWN
C. of Good Hope
TROPIC OF CAPRICORN
ATLANTIC OCEAN
INDIAN OCEAN
United States
Mexico
Cen. Amer.
Venezuela
Ecuador
Peru
Argentine Republic
Argentine
China
India
Malay Pen.
New Guinea
Australia
SCALE OF MILES
0 200 400 600 800 1000 1200
COMPARATIVE AREA
THIS RECTANGLE CONTAINS 100,000 SQUARE MILES
40
30
20
10
0
10
20
30
40

forests merge into open grassy plains, where the rains are lighter,—falling when the equatorial rain belt moves over them. Beyond these grassy plains lie desert regions,—the Sahara in the north and the Kalahari in the south.

Entrance to Suez Canal.

3. Egypt and the Nile.

The highest plateau in Africa is that of Abyssinia. Its east slope, facing the Red sea, is steep, and is not broken by large river valleys. The west slope is more gentle, and is drained by branches of the Nile river.

The main river of the Nile system rises in the lake region of middle Africa, and is the only large river flowing northward to the Mediterranean sea. The basin of the Nile is thought to be about as large as that of the Mississippi.

For hundreds of miles this great river flows through the desert and does not receive a single tributary. There the river has cut a long and broad valley, and has made a flood plain several miles in width. Every summer, after the equatorial rains have fallen in the highland of Abyssinia, and in the lake region of middle Africa, the Nile overflows its flood plain, and deposits a thin coating of new soil. Most of this sediment is given by the Atbara to the Nile.

In the harvest time on the fertile delta and flood plains of the Nile may be seen cotton, sugar-cane, rice, wheat, corn and other products like those raised on the southern plains of North America. Cattle and sheep also graze in the pastures of the Nile valley.

The flood plains of the lower Nile form one of the most thickly settled parts of the world. Most of the people belong to the white race, although their skin is very dark. Millions of Negroes dwell in the basin of the Upper Nile.

4. Northern Africa and the Sahara Desert.

The highland which includes the Atlas mountains consists of long and narrow plateaus with border ranges. These plateaus, like other high plains between ranges, receive but little rainfall, and are suitable only for pasture land.

The northern slopes of this highland receive rains from the westerly winds in winter. These slopes are fertile, and produce cereals and fruits like those of southern Europe. The slopes of the highland which face inland are almost barren, because they are on the lee side of the mountains.

Most of the people in the lands on the north of the Sahara desert have dark or swarthy skin, but they belong to the white race.

The desert of Sahara, though about as large as Canada, supports only about one-third as many people. Most of these live near the fertile places, or *oases*, where there are wells or natural springs. The desert tribes are mostly wandering Arabs, or *Bedouins*, and Berbers. Although their skin is swarthy they belong to the white race.

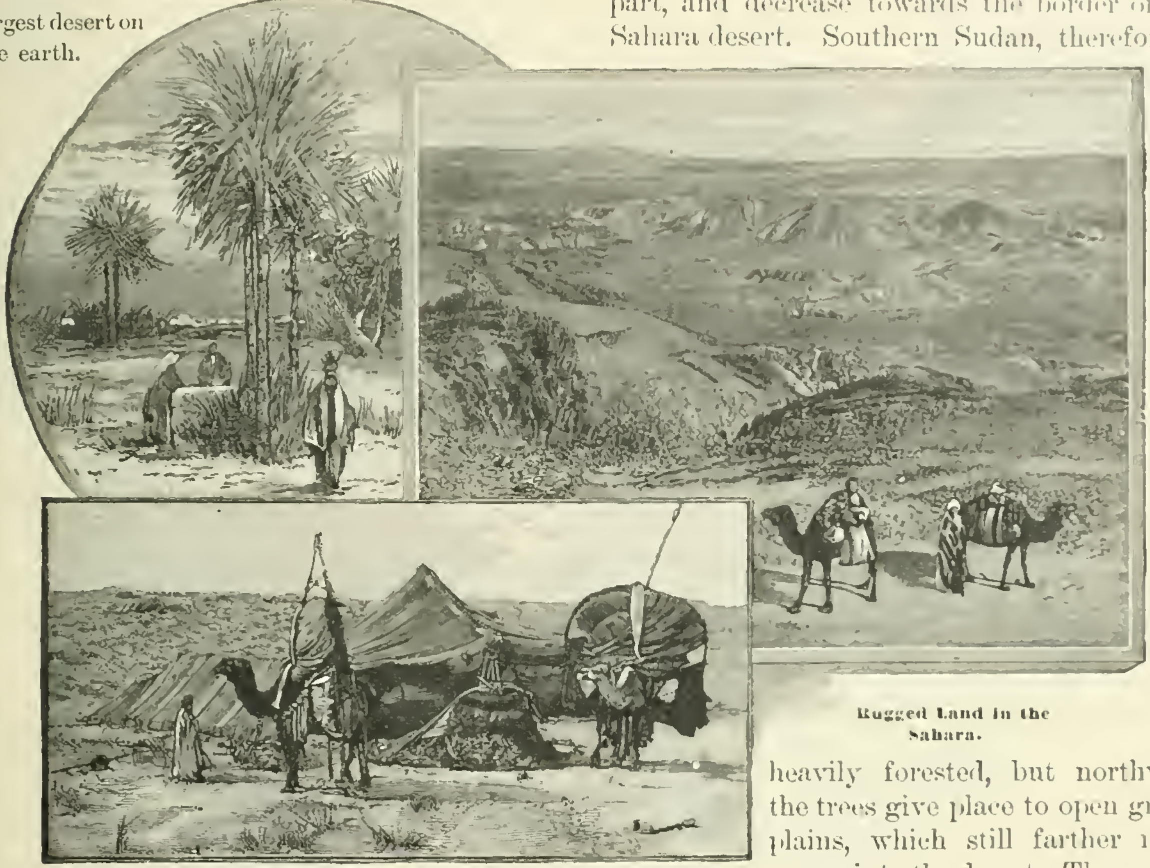
In the middle and eastern parts of the desert, the surface consists largely of stony table-lands. Some of these are a mile high. They are swept by hot dry winds which blow away the dust from their stony or gravelly surfaces.

Near the desert mountains and table-lands are many springs around which date trees grow. Some grain also is raised there.

The western part of the desert of Sahara is mainly a great sandy region in which countless dunes form. Some of these are more than six hundred feet in height. Much less than half the great desert of Sahara is a sandy waste.

Violent winds, like the squalls of our thunder storms, but without rain or clouds, often raise great quantities of dust in the Sahara. These hot winds, called the *simoom*, sometimes darken the sky with dust. Caravans hardly survive the stifling heat and dust of the simoom. The camels crouch to the ground, and the men wrap their heads in their cloaks.

The Sahara is the largest desert on the earth. This desolate region is too far south to receive rains from the westerly winds, and too far north to be reached by the equatorial rain belt. Even along the Atlantic coast of the desert there is no rain.



Rugged Land in the Sahara.

Bedouin Camp in the Sahara Desert.

The Sahara desert is part of a great belt of arid regions, whose rainfall is so light that they have no overflow to the sea. The desert belt crosses Arabia, Iran, the Middle Basin and the Gobi region. A wide branch of this barren belt spreads northward around the Aral and Caspian seas.

5. Sudan.

A wide belt of country south of the Sahara desert is known as *Sudan.* It extends from the Atlantic coast to the highland of Abyssinia.

Sudan is wholly north of the equator, but is within the range of the equatorial rains. They are heaviest, however, in the southern part, and decrease towards the border of the Sahara desert. Southern Sudan, therefore, is heavily forested, but northward the trees give place to open grassy plains, which still farther north merge into the desert. The greater part of the country is fertile.

The greater part of central Sudan is in the basin of lake Chad,—the largest basin of interior drainage in Africa.

There are many large towns and villages in the park-like district south of Lake Chad, and the region is thickly settled. Most of the people are Negroes.

These people are well advanced in many respects beyond the savage state, for they carry on an extensive trade, and have some manufactures.

The towns near Lake Chad are trade centres where caravans meet. The ivory tusks of elephants form a leading article of export. Camels and horses in large numbers are reared for market. Grain and cotton are important products.

Algerian.

The Niger basin is thought to be about three-fourths as large as that of the Mississippi. The Niger river rises in the hilly district near the south-west end of the old plateau region. After making a great bend northward, and flowing for several hundred miles in the Sahara desert, the river turns southward and enters the sea through the largest delta in Africa.

The greater part of this delta is covered with forests and coarse grass. Small steamers from the sea can go a few hundred miles up the Niger, before their progress is stopped by rapids; but the steamers can ascend the Benue branch to a point about 600 miles from the river mouth. No other river in tropical Africa is navigable for so great a distance inland from the sea.

The coastal regions south and south-west of the Niger basin are reached by the equatorial rain, and most parts of them are forested. White people from Europe have many trading stations along this coast. The products are like those of the Niger basin.

6. The Congo Basin.

The Congo basin occupies the greater part of middle Africa and lies west and south-west of the upper Nile basin. Almost all the Congo basin is a plateau with a general slope westward. The average height of the region is about half a mile above sea level.

The Congo basin is mainly in the southern portion of the equatorial rain belt, and parts are heavily wooded. This basin is thought to be the second largest in the world.

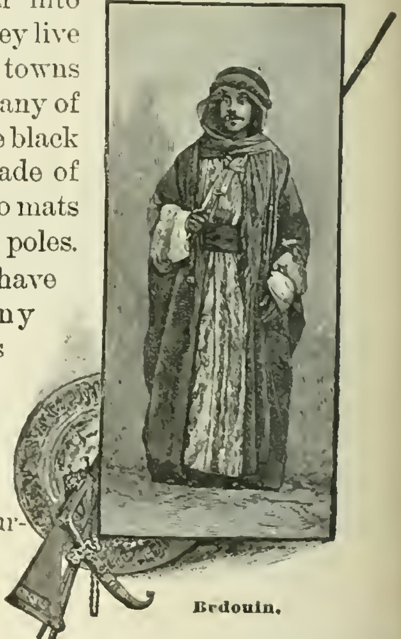
The Congo, like the Nile, rises in the lake region of middle Africa. One branch of the Congo is the outlet of Lake Tanganyika. Other branches flow from smaller lakes farther south.

The vegetation of the Congo basin is very luxuriant. Among the useful food plants are the cassava, the yam, the plantain, corn and sugar-cane. Palm oil and cotton are other important products.

The basin of the Congo is the home of many large and fierce animals. Among these are the chimpanzee, the crocodile and the rhinoceros. Every year thousands of elephants are killed for their tusks.

The natives of the Congo basin belong to the black race. Their number runs far into the millions. They live mostly in small towns and villages. Many of the huts of these black people are made of grass, woven into mats and fastened to poles.

White people have established many trading stations along the coast on the upper Congo and its tributaries. These traders purchase ivory, palm oil and other products.



Bedouin.

Why has the Amazon about 25,000 miles of streams navigable from the ocean, and the Congo only about 90 miles?

7. Southern Africa.

In the Zambezi basin are found the same changes, from forest to grass land and then to desert, as in Sudan. The forests of the Zambezi basin are densest in the northern part, where the equatorial rains fall in summer. The southern part of the basin reaches the Kalahari desert.

The Zambezi is the largest African river flowing into the Indian ocean. This stream is thought to drain an area equal to about two-thirds that of the Mississippi basin.

The Zambezi has built a large delta. The distributaries which cross it are generally barred with sand, but vessels that can float over the bars may ascend for about three hundred miles.

The natives of the Zambezi basin are savages of the black race. They raise grain and have herds of cattle.

The southern part of Africa, including nearly all the region south of the Orange river, and a small area north of that river, is known as *Cape Colony*. It is crossed from east to west by a rugged plateau that forms the southern end of the great African highland.

The seaward slopes of this plateau, like those of the Atlas highland, have winter rainfall and summer drought.

Wheat and other kinds of grain are raised on the seaward slopes of Cape Colony, and many cattle, sheep and ostriches are reared there. Wool, ostrich-feathers and hides are valuable exports.

The richest diamond mines in the world are at Kimberly. The value of the diamonds is greater than that of all the other exports of Cape Colony.

The native people of this country belong to the negro race, but white people from the British Isles control the land, and form about one-fourth of the population. Cape Town is the chief port in South Africa.

Madagascar, the largest island off the coast of South Africa, is about two and one-half times as large as Great Britain. Its coastal region is mostly low and unhealthy, but the interior consists largely of grassy and wooded plateaus. The leading exports are cattle, hides, coffee, and Indiarubber.

8. Countries in Africa.

Egypt.—This country is nominally part of the Ottoman Empire, though the Sultan of Turkey has very little control over the affairs of Egypt. The *Khedive*, or ruler, of Egypt resides in **Cairo**, the capital. This is one of the oldest cities in the world.

The principal exports of Egypt are cotton and cotton seed. The most valuable imports here, as in all other African countries, are various kinds of cloth. Great Britain controls the greater part of the foreign trade of Egypt.

Alexandria, in the Nile delta, is the largest seaport of this country.

Cairo, Egypt.

Tripoli.—This portion of the Ottoman Empire is thinly settled. The capital is the only important city.

Tunis and Algeria.—These countries have been added to the possessions of France. They form part of the French territory which now extends across the Sahara and Sudan.

The coastal districts of Tunis and Algeria have many fertile valleys that produce wheat. Olives grow here in abundance, and cattle and sheep find good grazing land. The cities of **Tunis** and **Algiers** export wheat, olive oil, wool and hides to France.

Morocco.—The products of this country are similar to those in Algeria.

Fez and **Morocco** are the principal cities of Morocco.

Sierra Leone.—This small colony belongs to the British nation. **Freetown** exports palm oil.

Liberia.—This is a negro republic settled largely by freed slaves from the United States.

Monrovia, the capital, is named after a former president of the United States. The chief exports from Monrovia are coffee and palm oil.

Congo State.—The King of Belgium is the ruler of the Congo State. **Boma** is the local capital.

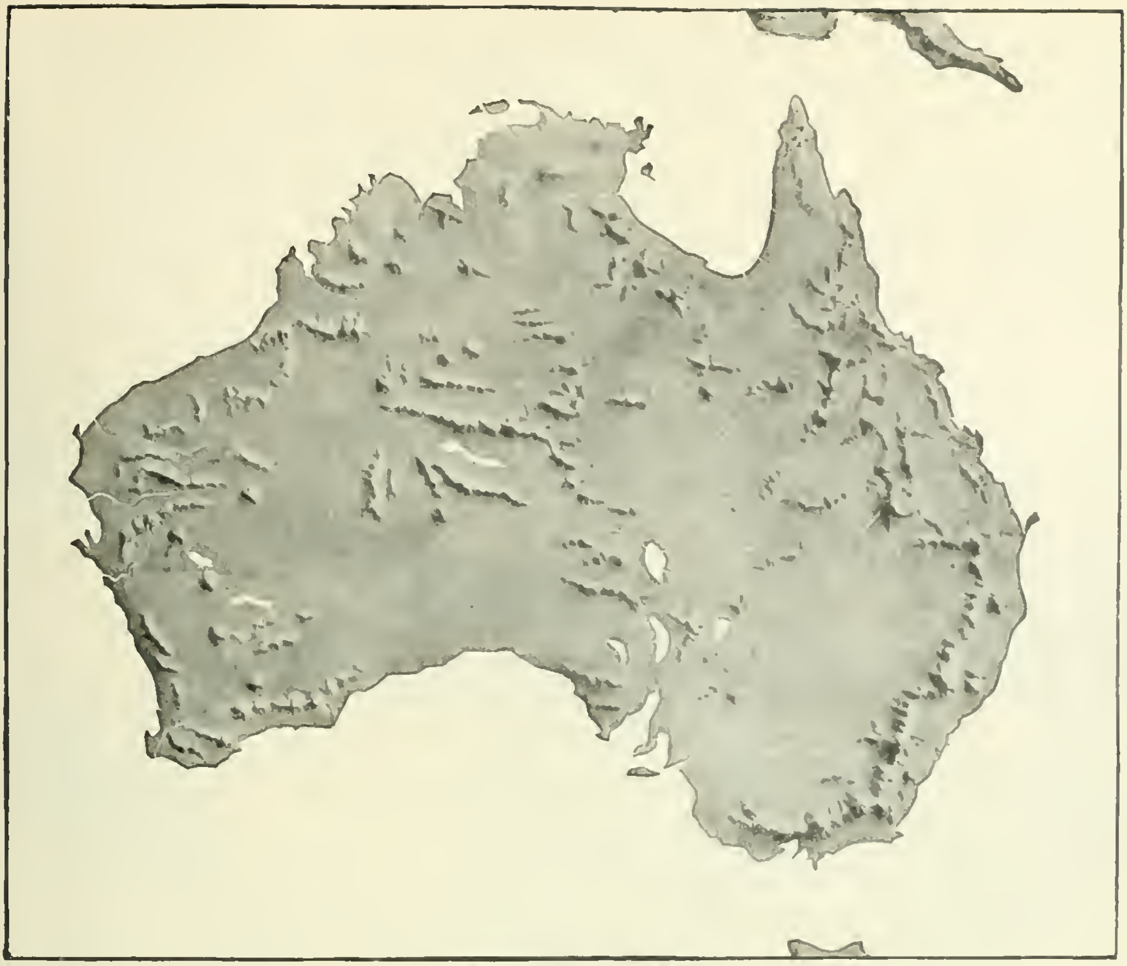
The most valuable exports of the Congo State are coffee, rubber, ivory and palm oil.

Cape Colony.—Cape Colony is a large and valuable British possession. Cape Town is the chief city.

Transvaal.—The Transvaal gold mines are among the richest in the world. The native black people are called *Kaffirs.* The early white settlers in this state were Dutch, here known as *Boers.* There are also many settlers from other white nations. **Pretoria** is the capital.

Johannesburg, the principal city near the gold region, has had very rapid growth.

European nations have seized nearly all parts of Africa. Italy is trying to control the territory in the region of the highland of Abyssinia; France not only claims large areas on the mainland, but is also seeking to control Madagascar; Great Britain, Germany and Portugal possess the greater portion of middle and southern Africa. Spain has a footing in the Sahara, and also directs the affairs of the Canary Islands.



Relief Map of Australia.

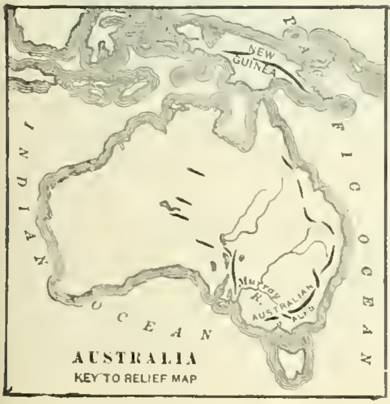
1. Map Studies.

Describe Australia,—its size, its place among the oceans, its direction from the other continents, its position in the heat and wind belts, its highlands and lowlands, its rivers, its coastlines.

In what respect is Australia like Africa? In what respect does Australia differ from North America? Locate New Guinea; Tasmania; New Zealand; the Fiji and Samoa Islands.

What parts of America, North and South, should have about the same climate as Australia?

Make a relief map of Australia and mark the location on it of the chief cities.



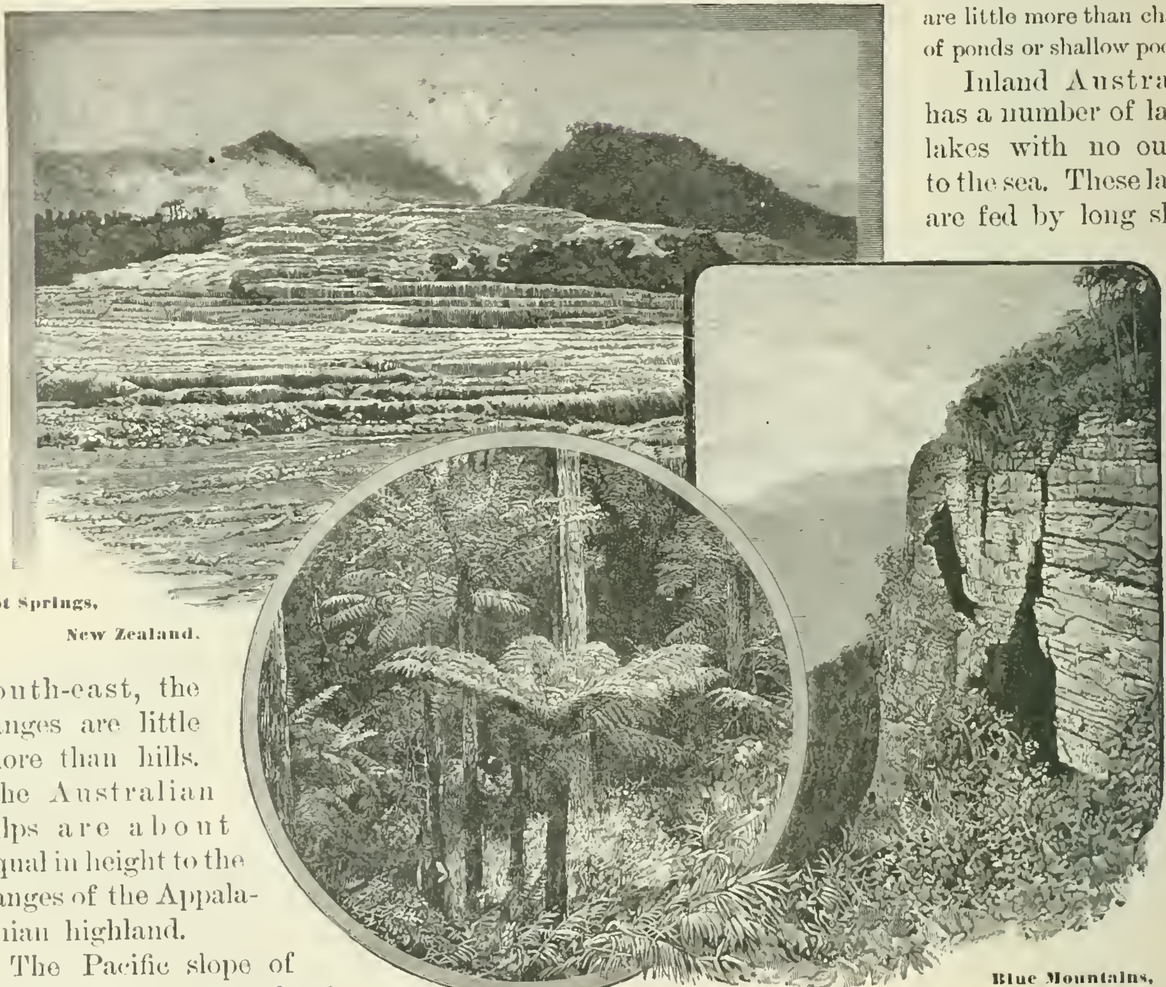
AUSTRALIA
KEY TO RELIEF MAP

AUSTRALIA.

1. Australia, the smallest of the continents, is about equal in area to Canada.

This small continent consists mainly of a half circle of low plateaus and ranges, around a wide central desert plain. Except in the south-east, the ranges are little more than hills. The Australian Alps are about equal in height to the ranges of the Appalachian highland.

The Pacific slope of Australia is in the path of the trade winds. The seaward slopes of the Australian Alps and the Blue mountains are therefore well watered. After crossing the mountains, these winds can give very little moisture to the basin of the Murray river. The streams of this basin are fed chiefly by rains in the highland on the south-east.


Hot Springs, New Zealand.

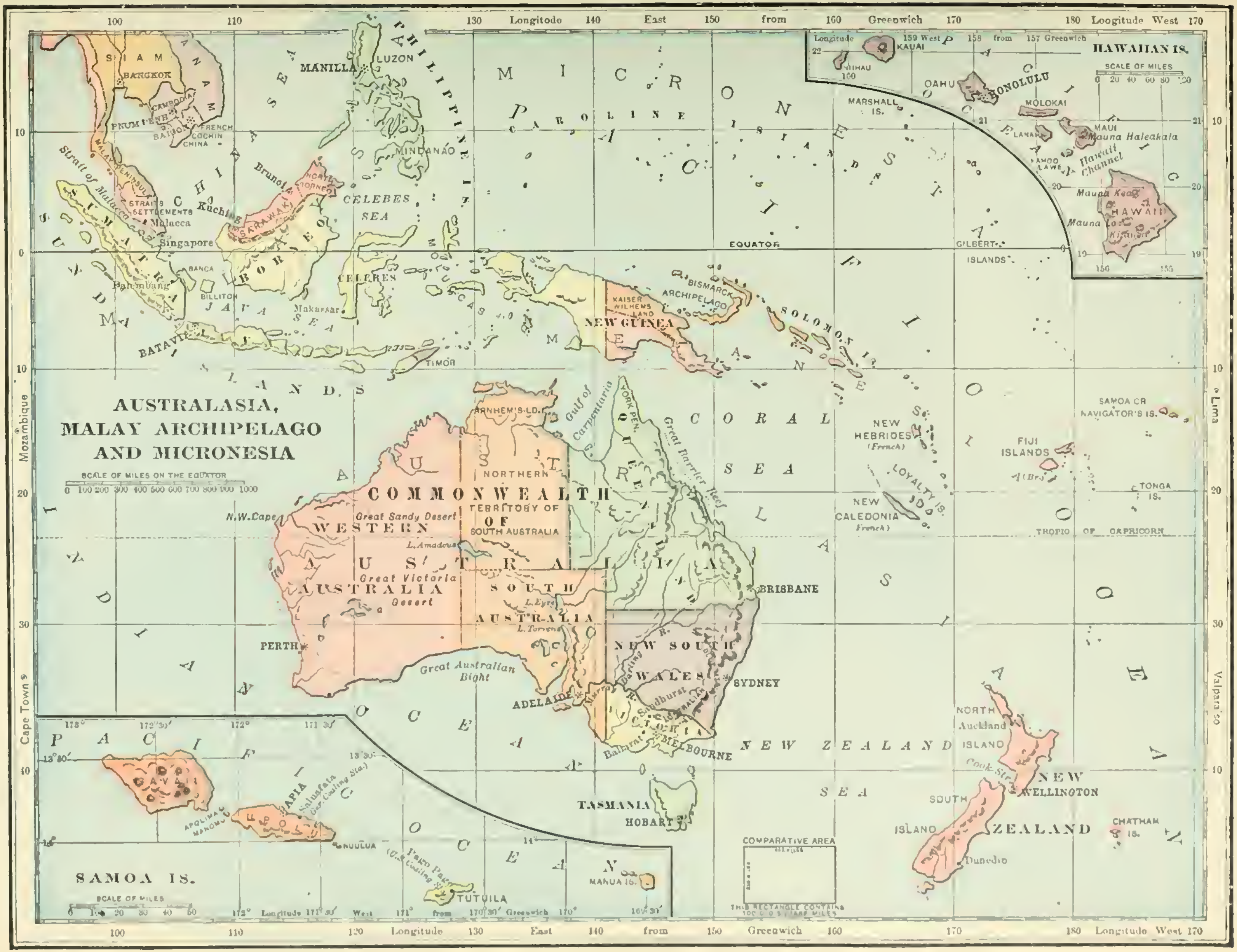
Tree Ferns.

Blue Mountains, Australia.

The basin of the Murray river is thought to be about one-third as large as that of the Mississippi. The Murray river and its branches form the only large river system in Australia, and yet even the main stream of this system is not deep enough to float large sea-going vessels. After heavy rainfall in the mountains, small vessels can ascend the Murray and some of its branches; but in seasons of drought the rivers become too shallow for shipping, and some of them are little more than chains of ponds or shallow pools.

Inland Australia has a number of large lakes with no outlet to the sea. These lakes are fed by long shallow streams from the border ranges. During the dry seasons, many of the lakes dwindle away to salt marshes.

The largest forests in Australia are in the eastern highland region, where the rainfall is



AUSTRALASIA, MALAY ARCHIPELAGO AND MICRONESIA heaviest. Wide areas of the inland plain are covered with coarse scrubby bushes. The wild animals of this continent differ widely from those in other continents. None of the kinds of large animals in the other continents which we have studied are native to Australia.

The natives of Australia belong to the black race. They are savages and live wretched lives. The total number in all the tribes is only about thirty thousand.

The fertile portions of the continent are inhabited by white people, mostly from the British Isles. The white men have driven the savages from these fertile plains. Neither sheep, cattle, wheat nor corn are native to Australia, yet they now form the chief sources of wealth there. The continent is famous for its gold mines,—mostly situated in the hilly belt along the Pacific margin.

Natives of Australia.

2. Commonwealth of Australia.

On January 1st, 1901, the five colonies—now called states—forming Australia, together with Tasmania, were constituted into a Federal Union, called the COMMONWEALTH OF AUSTRALIA. Each state manages its own local affairs. The capital, which must be situated in New South Wales, is not yet selected.

Natives and Temple, Solomon Islands.

Melbourne, the chief seaport of Victoria, is the largest city of Australia. Its population is larger than that of Montreal and Toronto combined. Melbourne has extensive manufactures.

Sydney, the principal port of New South Wales, is on a long and deep land-locked bay. This is the oldest and the second largest city in Australia.

Adelaide is the commercial centre of South Australia. **Brisbane,** on the river of the same name, is the capital and leading port of Queensland.

3. New Zealand, Papua and Other Islands.

A little more than a thousand miles south-east of Australia lie two large islands and

Fiji Warrior.

several small ones, forming the group known as New Zealand.

The mountains of southern New Zealand, rivaling in height the Rocky mountains, receive heavy rainfall from the westerly winds. Great glaciers descend the slopes of the New Zealand mountains.

Many parts of these islands are forest-clad. Among the trees are lofty pines and large tree-ferns.

The natives of New Zealand belong to the brown race. Their number is small compared with that of the white people who have in recent years chosen those islands for their home.

Sheep-raising is the chief industry in New Zealand, although there were no sheep on the islands when the white man first settled there.

Dunedin is the chief port of the South island; **Auckland**, of the North island. **Wellington** is the capital.

Tasmania lies south of Australia. It was formerly called Van Dieman's Land, and was used by the British Government as a penal colony. Hobart is the capital. Agriculture, mining and whale fishing are leading occupations. There are large coal beds on the island.

Papua is the largest island in the world. It is about as large as Ontario and Manitoba combined. Except along some parts of the coast, Papua is in the possession of black people who do very little to develop its resources, although the lowlands of the island are fertile.

Coral and Volcanic Islands.—Many of the low islands in the Pacific are of coral origin. Some are in the form of long bars, or *reefs*; others take the shape of rings, or *atolls*, inclosing lagoons. These coral deposits are constantly wasting away in the still water of the lagoons, and increasing outwards towards the open sea.

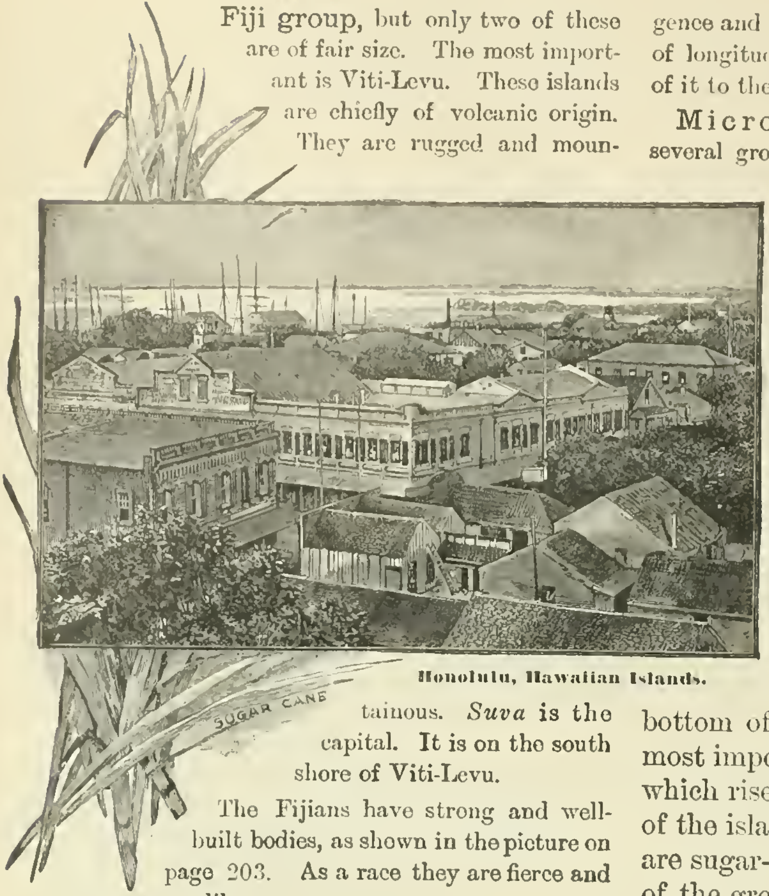
The higher islands far out in the Pacific are volcanoes. Many of these are still active, but others are extinct. Coral reefs, called *barrier reefs*, surround most of the lofty islands.

Polynesia.—Several groups of small islands lying eastward from Papua and Australia are included in the term Polynesia. They are the Fiji, Friendly, Samoan, Society, Marquesas, Ellice, and Cook islands.

Cocoanut Tree.

Cocoanuts.

There are about 300 islands in the **Fiji group**, but only two of these are of fair size. The most important is Viti-Levu. These islands are chiefly of volcanic origin. They are rugged and mountainous. *Suva* is the capital. It is on the south shore of Viti-Levu.



Honolulu, Hawaiian Islands.

The Fijians have strong and well-built bodies, as shown in the picture on page 203. As a race they are fierce and warlike.

South-east of the Fiji group are the **Friendly islands**, of which Tonga is the largest. Since white people first went to these islands to teach the natives, most of them have learned to read. Christianity prevails on these islands.

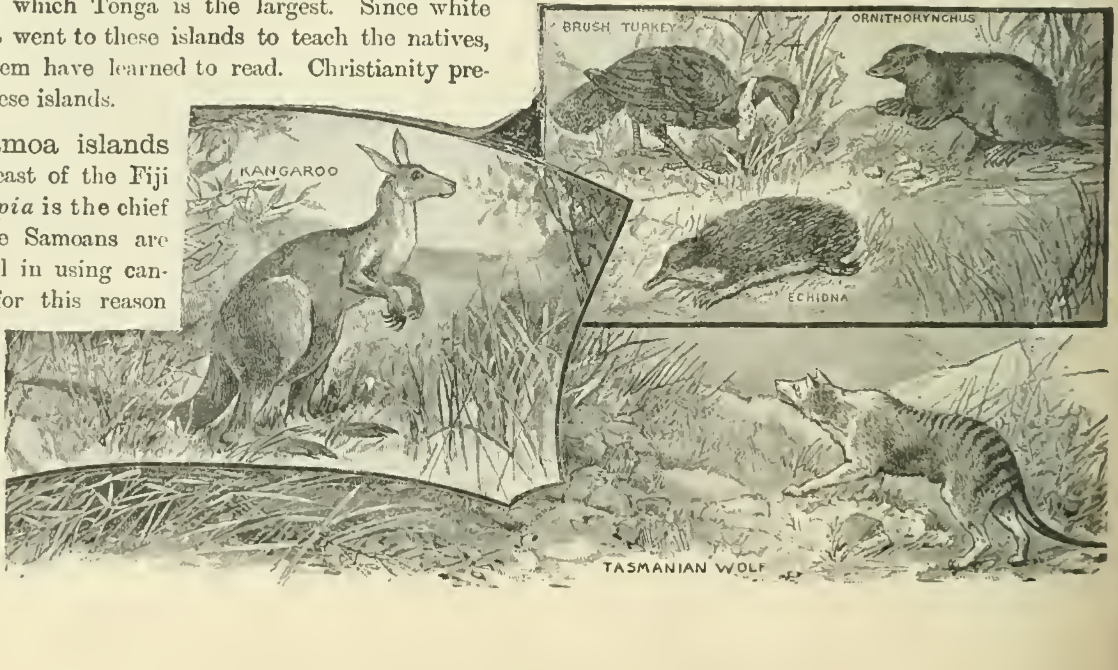
The **Samoa islands** are north-east of the Fiji group. *Apia* is the chief town. The Samoans are very skilful in using canoes, and for this reason their islands are often called the *Navigator's islands.*

The people of Samoa are above the average Pacific islanders in intelligence and morality. In 1899 the islands west of 171° of longitude were assigned to Germany, and those east of it to the United States.

Micronesia.—North-eastward from Papua are several groups of islands which together take the name of Micronesia, meaning *small islands.* Among these groups, the Ladrones are mostly of volcanic origin; but the Caroline, Marshall and Gilbert islands are chiefly the work of coral polyps.

The savages who dwell in these islands may be grouped with the people of the brown race; but in language and customs, the Micronesians differ from the natives of the large islands of the East Indies.

The **Hawaiian islands** form part of the United States. They are near the tropic of Cancer, about 2,000 miles south-westward from San Francisco. These islands were built up by volcanic action, from the deep bottom of the middle Pacific. They form the most important group among the many islands which rise far out in that ocean. The lowlands of the islands are fertile. Among the products are sugar-cane and rice. Hawaii is the largest of the group of eight islands. Honolulu, the chief city, is on the island of Oahu.



Houses of Parliament, London, England.

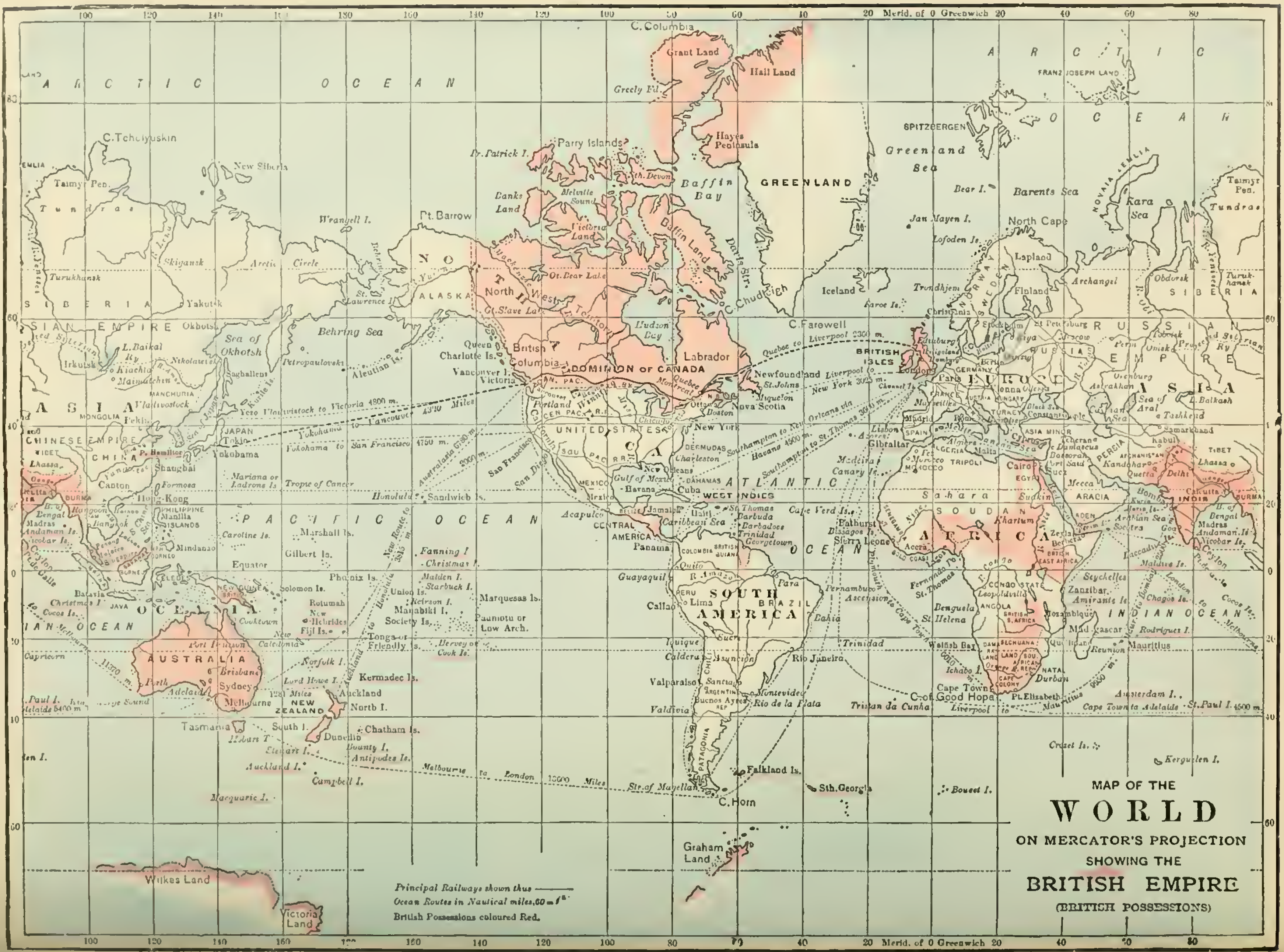
THE BRITISH EMPIRE.

Extent. — The British Empire, of which Canada forms so large a part, is the largest empire that has ever existed. It contains about one-fifth of all the land in the world. The British Islands, which form the head of the empire and are the source from which its chief power comes, are really very small compared with the rest of the great empire which they have formed. The British Empire consists of the United Kingdom of Great Britain and Ireland, together with colonies in every quarter of the world. The following table gives the area of the principal parts of the empire:

Canada	3,729,665	square	miles.
Australia	2,972,573	"	"
India	1,776,642	"	"
South Africa . .	276,000	"	"
British Guiana . .	104,000	"	"
New Zealand . .	104,751	"	"
England	50.222	square	miles.
Newfoundland . . .	42,200	"	"
Ireland	32,535	"	"
Borneo (part) . . .	34,000	"	"
Scotland	29,820	"	"
Honduras (part) . .	7,562	"	"
Wales	7.446	"	"
Jamaica	4,193	"	"

Questions: Omitting Australia, how does Canada compare in size with the whole of the rest of the empire? How many times is the whole empire as large as the United Kingdom? How many times is Canada as large as the United Kingdom? How many times is Australia as large as the United Kingdom? How many times is British India as large as the United Kingdom? With Canada as the base, draw on the blackboard a series of squares in colors, representing the relative size of the chief parts of the British Empire.

Note. — An approximate idea of the relative sizes of the different portions of the empire may be given to junior classes by lines.



MAP OF THE

WORLD

ON MERCATOR'S PROJECTION

SHOWING THE

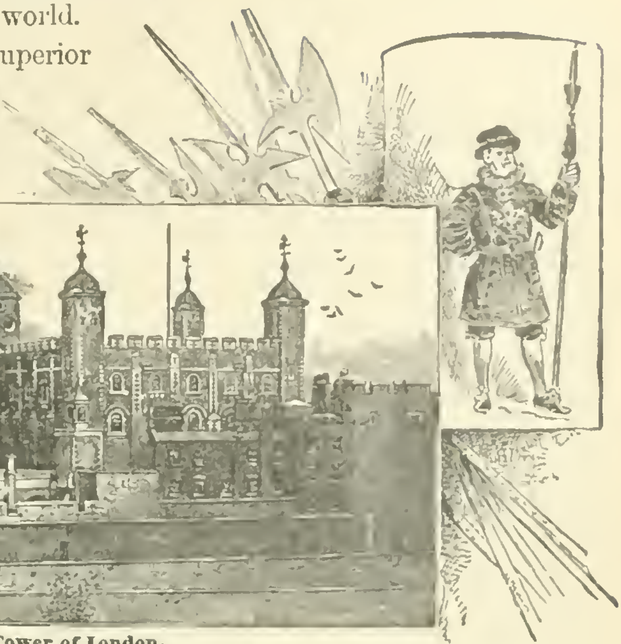
BRITISH EMPIRE

(BRITISH POSSESSIONS)

Principal Railways shown thus
Ocean Routes in Nautical miles, 60 = 1°
British Possessions coloured Red.
Merid. of 0 Greenwich
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
INDIAN OCEAN
GREENLAND
DOMINION OF CANADA
NORTH WEST TERRITORY
ALASKA
UNITED STATES
SOUTH AMERICA
AFRICA
EUROPE
ASIA
RUSSIAN EMPIRE
SIBERIA
CHINESE EMPIRE
INDIA
AUSTRALIA
NEW ZEALAND
OCEANIA
BRITISH ISLES
WEST INDIES
Quebec to Liverpool 2300 m.
Yokohama to San Francisco 4750 m.
Vancouver to Yokohama 4310 Miles
Melbourne to London 13000 Miles
Cape Town to Adelaide St. Paul I. 4500 m.

Population.—The population of the British Empire is a little more than one-fifth of all the people in the world.

Commerce.—The British Empire is vastly superior to any other empire in the extent of her commerce. The total number of merchant vessels belonging to the British Empire, in 1902, was 35,781. The tonnage was 11,566,745 tons net.



Tower of London.

The British Empire has been appropriately called "The Ocean Empire." Dr. G. R. Parkin says "All the great oceans wash its shores. Water, more than land, forms its boundaries, and the sea is the chief means of connection between its different parts. The ocean trade of its people is greater than that of any nation of present or past times. British ships not only carry British commerce, but also a large part of the merchandise exchanged between other countries."

Westminster Abbey.

The ocean really does not keep the different parts of the empire apart as in former times. So far as trade is concerned it brings the empire into closer unity. Wheat or cattle or apples can be carried from Montreal to England as cheaply as from one end of England to the other. The same is true of the cost of bringing wool from Australia. The cost of taking a bale of wool from Australia to London is about the same as from London to Leeds. The great manufacturers of iron in England pay as much to send their goods to Liverpool as its costs to send them from Liverpool to the colonies.

The different parts of the empire are connected, not only by swift steamships, but by telegraph lines, so that events occurring in any part of the empire may be known in a few minutes in all the other parts. Of 125,000 miles of ocean cables the British Empire owns about 90,000 miles.

Canada's place in the Empire.—If we examine the map of the British Empire, we may note three important facts; Canada is the largest part of the empire; it is nearer the "mother land" than any other large part of the empire; and it lies about in the centre of the empire, between the British Isles and India and Australia. The quickest route from England to India or Australia is by steamship from England to Canada, by rail across Canada, and by steamer from Vancouver. These facts make Canada a very important part of the empire.

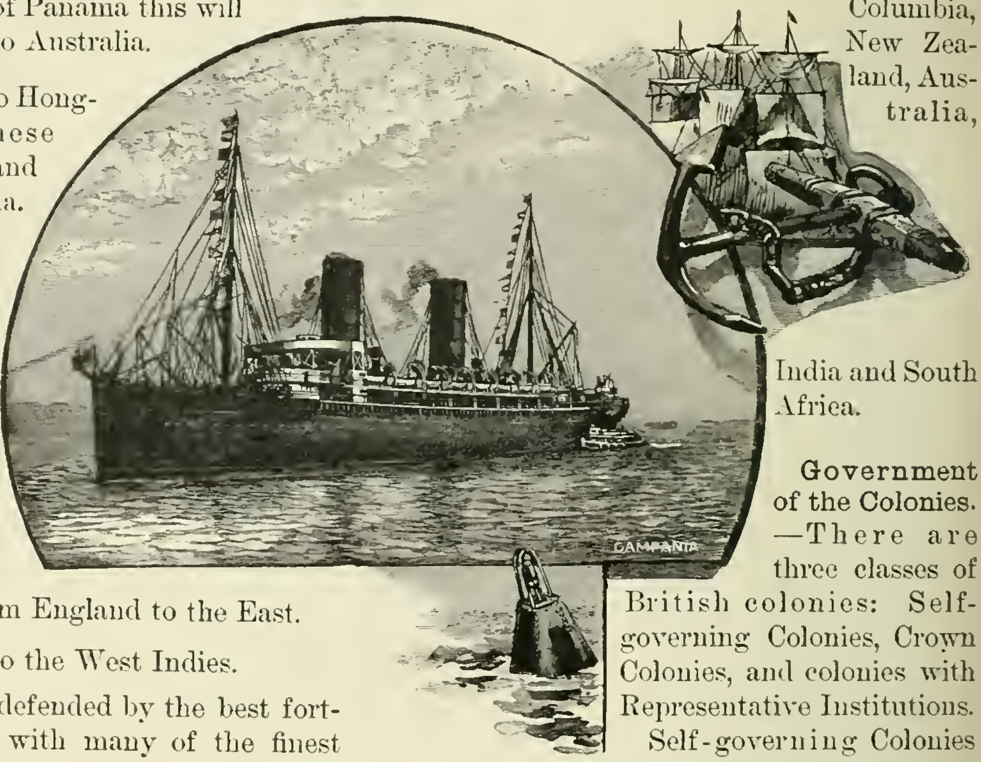
Trade Routes of the Empire.—The leading trade routes between different parts of the empire are:

1. From the British Isles to the East by way of the Straits of Gibraltar, Mediterranean Sea, Suez Canal, Red Sea, into the Indian Ocean, thence to India or Australia and New Zealand.

2. From the British Isles to the East down the Atlantic Ocean and round the Cape of Good Hope, thence to India or Australia and New Zealand.

3. From the British Isles across the Atlantic Ocean to Canada.

4. From the British Isles to the West Indies, Guiana and Honduras. When a canal is cut across the Isthmus of Panama this will make a new route to Australia.



5. From Canada to Hong-Kong, taking Chinese and Japanese trade and connecting with India.

6. From Canada across the Pacific Ocean to New Zealand and Australia. This route with the Canadian Pacific Railway and the route to England from Canada makes the most rapid route from England to the East.

7. From Canada to the West Indies.

These routes are defended by the best fortresses and supplied with many of the finest harbors in the world.

Exercise: Draw a map of the world and mark the position of the following fortresses and harbors belonging to the British Empire: Gibraltar, Malta, Perim Aden, Bombay, Colombo, Trincomalee, Singapore, Hong-Kong, Sierra-Leone, Ascension, St. Helena, Table Bay, Simon's Bay, Mauritius, Melbourne, Sydney, Brisbane, Port Darwin, Hobart, Auckland, Wellington, Lyttleton, Dunedin, Quebec, Halifax, Bermuda, Kingston and Esquimalt.

Great docks for the repairing of ships have been constructed at Gibraltar, Malta, Bombay, Hong-Kong, Sydney, Auckland, Lyttleton, Halifax, Esquimalt and Bermuda.

For the purposes of commerce or defence coal is of great importance. The British Empire keeps abundant supplies of coal for coaling her merchant vessels and her great battleships in the harbors named and in other convenient places along the great trade routes of the world.

A great deal of this coal comes from Great Britain, but there are inexhaustible supplies for this purpose in Nova Scotia and British Columbia, New Zealand, Australia, India and South Africa.

Government of the Colonies.—There are three classes of British colonies: Self-governing Colonies, Crown Colonies, and colonies with Representative Institutions.

Self-governing Colonies elect the members of their parliaments or legislatures to make their own laws, arrange their own taxes and customs rates, and conduct their own public works. Canada, Australia, Tasmania, Newfoundland, and parts of South Africa belong to this class of colonies.

Crown Colonies are governed directly by officers appointed by the British Government.

Esquimalt Dry Docks.

India, Hong-Kong, Gibraltar and Sierra Leone are Crown Colonies.

In the third class of colonies, the government is a kind of unity of the plans adopted in the other two. The parliaments that make the laws in these colonies are partly elected by the people of the colonies and partly appointed by the British Government. Jamaica and most of the West Indies, Malta and Guiana are colonies with Representative Institutions. In all British colonies the ruler of the empire is represented by a Governor appointed by the British Government.

The Self-governing Colonies are represented in London by agents appointed by the governments of the respective colonies. The representative of Canada is called "The High Commissioner for the Dominion of Canada."

British Strongholds.—British statesmen have shown wisdom in securing control of the leading strategic points of the world:

Gibraltar, at the entrance to the Mediterranean Sea, is the strongest fortress in the world.

Malta, near the centre of the Mediterranean, controls the commerce of that great sea.

Aden controls the mouth of the Red Sea, as Gibraltar guards the entrance to the Mediterranean. Both are practically impregnable. By these forts Britain controls the trade of the Indies, which is of very great importance.

Importance of the British Empire.—Lord Roseberry has said:—"A collection of states spread over every region of the earth, but owning one head and one flag, is even more important as an influence than as an Empire. From either point of view it is a world-wide fact of supreme significance; but in the one capacity it affects only its own subjects, and in the other all mankind. With the Empire statesmen are mainly concerned; in the influence every individual can and must have a part. Influence is based on character, and it is on the character of each child that grows into manhood within British limits that the future of our Empire rests.

"If we and they are narrow and selfish, averse to labor, impatient of necessary burdens, factious and self-indulgent; if we see in public affairs not our Empire, but our country, not our country but our parish, and in our parish our house, the Empire is doomed. For its maintenance requires work, and sacrifice, and intelligence. The time cannot be far remote when the British Empire must, if it remain united, by the growth of its population and its ubiquitous dominion, exercise a controlling authority in the world. To that trust our sons are born."

Jaunting Car, Ireland.

Colonies, Protectorates, and Dependencies of the British Empire.

CONTINENT.	POSSESSION.	HOW GOVERNED.
I. Europe	Gibraltar	*Crown Colony.*
	Malta	*Representative Institutions.*
II. Asia	Aden	*Protectorate of Bombay.*
	Andaman and Nicobar Islands.	*Dependency of Bengal.*
	Bahrein Islands	*Protectorate.*
	Baluchistan	*Dependent State.*
	North Borneo	*Protectorate.*
	Brunei	*Protectorate.*
	Ceylon	*Crown Colony.*
	Cyprus	*Protectorate*
	Hong Kong	*Crown Colony.*
	India	*Crown Colony.*
	Kuria Mura Islands	*Dependency of Aden.*
	Labuan	*Crown Colony.*
	Laccadive Islands.	*Dependency of Madras.*
	Perim	*Dependency of Aden.*
	Sarawak	*Protectorate.*
	Sikkem	*Dependent State.*
	The Federated Malay States.	*Protectorate.*
	The Straits Settlements.	*Crown Colony.*
	Wei-Hai-Wei	*Crown Colony.—Leased from China.*
III. Africa	Ascension Island.	*Controlled by Admiralty.*
	Basutoland	*Crown Colony.*
	Bechuanaland	*Annexed to Cape Colony.*
	Bechuanaland Protectorate.	*Protectorate.*
	British Central Africa.	*Protectorate.*
	British East Africa.	*Protectorate.*
	Cape Colony	*Responsible Government.*
	Egypt	*Protectorate.*
	Gambia	*Crown Colony.*
	Gold Coast Colony	*Crown Colony.*
	Lagos Territory	*Crown Colony.*
	Mauritius	*Representative Institutions.*
	Natal	*Responsible Government.*
	Nigeria	*Protectorate.*
	Orange River Colony.	*Crown Colony.*
	Rhodesia	*Representative Institutions.*
	Seychelles	*Crown Colony.*
	Sokotra	*Dependency of Aden.*
	Somaliland	*Protectorate.*
	St. Helena	*Crown Colony.*
	Sierra Leone	*Crown Colony.*
	Transvaal Colony	*Crown Colony.*
	Uganda Protectorate.	*Protectorate.*
	Zanzibar Protectorate.	*Protectorate.*
	Zululand	*Dependency of Natal*
IV. America	Bahamas	*Representative Institutions.*
	Barbadoes	*Representative Institutions.*
	Bermudas	*Representative Institutions.*
	British Honduras.	*Crown Colony.*
	Canada	*Responsible Government.*
	Falkland Islands.	*Crown Colony.*
	Guiana	*Representative Institutions.*
	Jamaica	*Representative Institutions.*
	Leeward Islands	*Representative Institutions.*
	Newfoundland	*Responsible Government.*
	Tobago	*Dependency of Trinidad.*
	Trinidad	*Crown Colony.*
	Turks and Caicos Islands.	*Dependency of Jamaica.*
	Windward Islands	*Representative Institutions.*
V. Australasia and Oceania	Commonwealth of Australia, consisting of New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania	*Responsible Gov't.*
	Fiji	*Crown Colony.*
	New Guinea, British.	*Dependency of Commonwealth.*
	New Zealand	*Responsible Government.*
	Southern Solomon Islands	*Protectorate.*
	New Hebrides	*Protectorate.*
	Tonga or Friendly Islands	*Protectorate.*
	Cook Islands	*Annexed to New Zealand.*

REVIEW QUESTIONS.

1. Of what does geography treat? What is the shape of the earth? Give as many reasons as you can for your answer.

How far is it around the centre of the earth? How far is it through the centre?

2. Of what is the greater part of the earth composed? How high are the highest mountains? How deep are the deepest parts of the sea? What is the general character of the bottom of the sea?

3. Is there more land north or south of the equator? Is there more land or more water on the surface of the earth? Describe the world ridge or primary highland. On which side of the primary highland are the longer land slopes? What is the general shape of the world ridge? Why are there no long rivers on the outside of the world ridge?

4. Name the four large bodies of land of which the world ridge forms the backbone. Name the six continents or grand divisions. Which continent lies wholly south of the equator? What strait cuts the world ridge in two? Draw an outline of the world ridge.

5. How much of the earth's surface is covered with water? How much with land? What continents are washed by the Arctic Ocean? By the Antarctic Ocean? By the Pacific Ocean? By the Atlantic Ocean? By the Indian Ocean?

6. What changes take place in the height of the water along the shores of the great oceans twice each day? What are tides? Describe an island, a peninsula, a cape, an isthmus, a strait, a sound, a channel, a bay, a gulf, a sea. Make the land forms with sand, or draw them on your books or slates. Make or draw the water forms.

7. What are mountains? How are they generally formed? Draw the shapes of different kinds of mountains, or make them with rock and sand? What is a mountain range? What is a mountain system? What two changes take place in the air as we ascend high mountains? Why is it hard to breathe on high mountains? Is it easier or more difficult to run as we go higher up? Why? Why is the air heavier at the foot of the mountain than at its top? What is an avalanche?

8. What is lava? In what two forms does lava usually cool? How are volcanoes formed? How many acres are covered by a lava flow in India? Where are most volcanoes found? Near what ocean are most volcanoes found? How are volcanic islands formed?

9. What are valleys? Describe as many kinds of valleys as you can. What is a gorge or canon? What is a glacier? What is usually found at the bottom of a valley?

10. What is meant by surface water? By ground water? What is a spring? Where are springs usually found? Are all springs on land? Why is ground water usually clear? Why do springs sometimes dry up? Why do rivers often have floods in the spring time? How were the great plains of Florida, Georgia, North and South Carolina formed? What change in the bed of the ocean is still taking place east of these States?

11. How does a river grow larger as it goes towards the sea? Why are large cities often built near rivers? What is the source or head of a river? What is the mouth of a river? How are water-falls caused? What is a cataract? A cascade?

12. What is a river basin? What is a river system? What is the effect of a river on the land over which it flows? What is a divide? What is the largest river in the world? What is the largest river in North America? Compare the size of the basins of the largest rivers in North America and in South America.

13. What are flood plains? What is silt? How is silt deposited? Why are flood plains fertile? Do many people live on flood plains? Why? What are deltas? How are they formed? What kind of soil is usually found on deltas? What do deltas become when they are old? Where is the largest delta plain in the world? Why are some cities that were once on the sea shore now far inland? Describe as many ways of forming plains as you can. How was the great Canadian plain formed? What are high plains called? Why do most of the people in the world live on plains?

14. What effect have weather changes on rocks exposed to air? What is land waste? How is it formed? How is soil formed from rock waste? In what countries do rocks weather most slowly? Why did Cleopatra's needle begin to crumble rapidly when it was brought to New York?

15. How does rock waste reach the valleys? What is an alluvial fan?

16. How are winds caused? Why are winds so important in deciding what parts of the earth are most fertile? What are trade winds? How are they caused? In what direction do they blow north of the equator? South of the equator? In what direction do the winds north and south of the trade winds generally blow? What is the effect of the westerly winds on the climate of the continents over which they blow? To what does Western Canada owe its mild climate? To what Western Europe? Do the Rocky Mountains make Canada warmer or colder by stopping the progress of the westerly winds from the Pacific Ocean? What other names are given to the westerly winds? Where does rain come from? Why does vapor form into rain? What are clouds? What carries the clouds across the land? Why do the trade winds give out little moisture? Why do mountain ranges have more rain on one side than on the other? On which side do they receive the larger rainfall? How are deserts formed? How might they be made fertile? Why is there so much rain in Ireland? In the western part of British Columbia?

17. What effect have strong winds on soil not covered with grass or trees? What are sand hills called? How were the "sand banks" of Prince Edward County formed? What are whirlwinds? How are waterspouts formed? What effect has wind on the ocean? What effect has wind on the air? What other advantages have winds in making the earth fit for man to live on? In what part of the earth are waterspouts most common?

18. What is a glacier? How are glaciers formed? What is a moraine? Why are there so many lakes in Canada and so few in the United States? Why are there so many boulders in Canada and so few in the United States? Why are there no boulders in the Southern States? What is a drumlin? How are icebergs formed?

19. How are ocean currents formed? Why do not currents move in direct lines around the earth? Where are the Atlantic and Pacific eddies? In what direction do the ocean eddies north of the equator turn? In what direction do those south of the equator turn? In what direction does the Antarctic eddy flow? What causes the Gulf stream? Trace its course. What is its influence on the British Isles and Norway? What current flows southward along the north-east coast of North America? What effect has this current on Labrador and Newfoundland?

20. What causes the tides? In what places do tides rise highest? Is the tide high in mid-ocean? Why is it higher at the shore? In what parts of the earth are there high tides at the same time? What are the highest tides called? The smallest tides? When are the highest tides formed? When the lowest? What is meant by flood tide? What by ebb tide?

21. What is the Solar system? How many motions has the earth? How long does it take the earth to go around the sun? What is the earth's orbit? What is the shape of the earth's orbit? What is perihelion? What is aphelion? How do we know that the earth moves around the sun? What is the diurnal motion of the earth? What is the result of the diurnal motion of the earth? How could day and night be caused, if the earth did not revolve on its axis?

22. What is the result of the annual motion of the earth? Could the earth go around the sun without causing a change of seasons? How is the earth's axis inclined? How often is the sun vertical over the equator each year? On what dates? When is the sun directly over the tropic of Cancer? Over the tropic of Capricorn? What are the conditions necessary to cause the change of seasons?

23. How many zones are there? Name them. Where are they located? In what zone do most civilized people live? State as many conditions as you can that influence climate.

24. How many times is the sun as large as the earth? How would the absence of clouds or dust from the air affect the temperature? Where is the hot belt? Where are the cold belts? Where are the cool belts? Where are the warm belts? Why have the sun's rays more influence at the equator than near the poles?

25. What is meant by latitude? By longitude? Why are latitude and longitude necessary? What are meridians? Where is the equator? What are the poles? Where is the first meridian? Why is this meridian chosen by English geographers? What is the highest longitude possible? The highest latitude? Why have not all places the same time? Why is there a difference between sun time and standard time in most places?

27. Is the moon a light or a dark body? Where does its light come from? When do we have new moon? When do we have full moon? How many times does the moon go around the earth in a year? Why does the moon rise later each day?

Plants.

Are all the grains and fruits grown in Canada native to the country?

What are the most important trees that grow in the hot belt? Which is the most useful of these trees?

State as many products of these trees as you can. What uses are made of bamboo? What are the chief articles of food in the hot belt? What are the chief imports from the hot belt to Canada?

What is the chief distinction between the trees of the warm belt and those of the cool belt? What are the great cotton producing countries of the world? Name the leading fruits of the warm belt. Where does most of the tea used in our country come from? What belt produces most sugar?

What is the most distinctive product of the cool belts of the world? Which is the most useful grain? Which grain grows in the widest range of temperature? In what belt does most timber grow? What trees grow farthest into the cold belts, and highest on mountain ranges?

Note.—One of the best maps in a schoolroom may be made by making a circle and dividing it into the belts of different temperatures, and pasting or drawing on it the characteristic plant products of each belt.

Animals.

Give some illustration of the adaptability of animals to their native homes. Give some illustrations to show how animals are constructed to suit their modes of living. Name as many animals as you can that are now common in America which were not natives of America. Which have a wider range of temperature adaptation—plants or animals?

Name the leading animals of the South American realm. Which are the most useful of these? Which is the largest bird that flies? What very large bird of South America does not fly?

What are the general characteristics of the animals of the northern realm? What are the most useful product of animals in the northern realm? Where is the moose found? The reindeer? The walrus? The seal? The chamois? Of what use is each of these animals?

Name the leading animals of the African realm. What are the two largest kinds of monkeys called? Which is most like man? What is the largest bird in Africa? What is the largest quadruped? What is the fiercest animal?

What are the two most useful animals of the Oriental realm? Of what use are elephants in India?

Which realm has the strangest animals? What is the chief difference between kangaroos and other animals? Are there many species of animals called kangaroos? What are the most useful domestic animals in Australia? What countries produce most wool? Name some strange birds of Australia.

Note.—A very interesting and useful map may be made by outlining the continents on stretched canvas or on a large sheet of manilla paper, and pasting on or drawing the animals that live in the different continents. Pupils may make enlarged pictures from those given in this book. Each pupil may make a smaller animal map for himself.

The best way to learn the production of a continent is to draw or fasten on a map the chief products of each country in it.

The Bottom of the Sea.

Describe the bottom of the sea. Are there any mountain ranges under the sea? What do the tops of the peaks form? Are there any volcanoes under the sea? What do they form when they reach the surface? How far down in the ocean does light penetrate? What is the greatest depth of the ocean? How do coral islands grow?

Races of Men.

How many races of men are there? In what respects do they differ? Where are the red men found? The black men? The yellow men? The brown men? The white men? How many people are there in the world?

Which race includes nearly one-half of the people of the world? Which race includes more than one-third the people of the world? What portion of the people of the world belong to the Black race? To the Brown race? To the Red race?

What are pagans? To what races do the pagans belong? About how many pagans are there in the world? What is the religion of the natives of India? What is the religion of the Yellow race? What part of the race belongs to the Buddhist religion? In what part of the world did the worship of God begin? What three great religions took the worship of one God? What are the chief distinctions between these three religions?

What is the prevailing form of government among savage people? What is an absolute monarchy? What nations or races have absolute monarchies? What is a limited monarchy? What countries have limited monarchies? What is a republic? What European countries are republics? In what continents are there most republics?

What is meant by trade? What is domestic commerce? What is foreign commerce? Name in order the five countries that have the largest foreign trade? Why is England the greatest commercial country in the world?

What commercial advantages has Canada? Name four ways by which goods are transported from one place to another.

North America.

What is the general shape of North America? How much of the earth's surface is in North America? What divides the continent into two great slopes? Which slope is larger? How is the eastern slope sub-divided? What belts of temperature cross North America? Why is the western slope of Mexico dry and the eastern slope well watered? Why is it that north of Mexico, through the United States and Canada, the western slope of the highland is well watered, and the eastern slope dry? Explain the rainfall in the central and eastern parts of North America.

Describe the Rocky Mountain highlands. What part of these highlands is called the Rocky Mountains? How far do the Rocky Mountains extend? Through what countries do they run? What mountains run between the Rocky Mountains and the Pacific, in the United States? In Canada? What are the highest peaks of the Rocky Mountains? In what country are they? Why is the climate of Canada west of the Rocky Mountains so mild? What are the chief rivers of the Rocky Mountain highland?

Describe the Appalachian Highland. Through what parts of Canada does it run? What are the chief rivers of the Appalachian Highland? How was New England affected by the glacial ice-sheet? What is the highest peak of the Appalachian range? Explain the general formation of mountains after studying the illustration on page 60. What are the most important valleys in the Appalachian Highland? What great canal runs through the Mohawk valley?

Between what highlands does the St. Lawrence river run? Trace the course of the Laurentian Highland. What is the general character of the Laurentian Highland east of Hudson Bay? How was this highland worn down? How do you account for the irregular coast-line of the north-east part of North America, and for the many large islands to be found north and north-east of this continent?

Name the great lakes of the St. Lawrence basin. How were the basins of these lakes deepened? What is the difference between the height of the surface of Lake Superior and the mouth of the St. Lawrence? What obstructions are there to the passage of boats from Lake Superior to the ocean? How are these obstructions overcome?

What is the character of the great central portion of North America? What three great river systems drain the great central plain of North America? Where is the watershed dividing these three river systems? What is the character of the northern or Canadian slope of this central plain? Describe the Arctic slope of this plain: The forest tract: The wheat belt. How were the rich plains of the Red River district formed? Describe the prairies of the United States. What is the character of the Gulf coast? What are the chief products of the southern plain? How was the eastern plain of the United States formed? How was Florida formed?

United States.

What is meant by Congress? How many bodies are included in Congress? How are the members of the House of Representatives chosen? How are Senators chosen? For how many years are Senators chosen? For how long are Representatives chosen? How is the President elected? For how long is he elected? What is meant by the Cabinet? How many States are there in the Union? How are the individual States governed? What are the Territories? How is Washington controlled? Make a map of the United States and mark on it the cities described on pages 127, 128, 129.

Mexico.

Where do most of the people of Mexico live? What are the chief agricultural products of Mexico? The chief minerals? What is the capital? The chief port? Compare the cities of Mexico and Montreal.

Central America.

Name the States of Central America. Are they united into one country? What are the chief exports from Central America? What colony has Great Britain in Central America? How large is it? What is its chief town?

West Indies.

What are the chief products of the West Indies? Which is the largest island in the West Indies? What is the form of government? What is the capital? Name the leading islands in the West Indies that belong to Great Britain. Which is the largest of the British possessions in the West Indies? What country owns Puerto Rico? What form of government has Hayti? What is the capital of Hayti? What is the capital of Jamaica?

South America.

What is the general shape of South America? Is it larger or smaller than North America? In what respect are the two continents alike? What isthmus connects them? How wide is this isthmus? What mountain range divides South America into two slopes? Which slope is longer? Why do no large rivers run into the Pacific?

Which parts of South America are in the trade wind belts? What is the chief advantage of being in this belt?

What are Selvas? What is the highest plateau in America? How high is it? What great lake is on this plateau? Why is the plateau of Bolivia not very hot? Why is it not very cold? Which side of the Andes has most rain? Why? Where is the region known as the rainless coast? Why is there no rain in this district? What causes the desert of Atacama? What is the highest city in South America? How far is it from the equator? What is the nature of its climate? What is the name of the highest active volcano in the world? To what danger is Quito exposed? Into how many ranges do the Andes divide in the northern part of South America?

What is the shape of the Brazilian highland? How does the Brazilian highland compare with the Andes highland? With the Appalachian highland? What large rivers flow from the Brazilian highland? What are Campos?

Describe the Guiana highland. When does most rain fall on these highlands? Why?

Name the three great river basins of South America, Which is the largest river basin in the world? What are the chief branches of the Amazon? How far can steamers ascend the Amazon? Describe the Selvas. How is rubber obtained? What are the chief products of the Selvas?

Where is the valley of the La Plata? Compare its size with that of the Amazon. What are Pampas? What is the chief use of the Pampas?

What are Llanos? How were they formed? Why have they wet and dry seasons? Describe the changes on the Llanos in the wet and dry seasons. What are the differences between the three great South American plains; the Selvas, the Pampas, and the Llanos?

Which is the largest country in South America? Which the smallest? What part of South America is owned by Great Britain?

Draw maps of South America for the following purposes:—(1) Draw the three great highlands. (2) Draw the river basins. (3) Mark the position of the Llanos, the Selvas, and the Pampas. (4) Locate the countries and the capitals.

Europe.

Compare Europe and Canada in regard to size. What is the general character of the south-west part of Europe? Of the north-west of Europe? Of the central and eastern part of Europe? What is the peculiarity of the coastline of Europe compared with that of other continents? In what heat-belt does the chief part of Europe lie? Which part of Europe receives most rain? Why? Which part receives least rain? Why? Why is the western part of Europe much warmer than the eastern parts of America, in the same latitude? What is the influence of the bodies of water around Europe on its climate? What part of Europe has warmest summers and coldest winters?

What is the chief difference between the Alps and the Appalachian Mountains? How do you account for this difference? Name the most important tunnels through the Alps. Which is the largest tunnel in the world? What branch of the Alps runs through Italy? What great rivers rise in the Alps? Where are the largest silk manufactories in the world? Why are they in this district?

What is the general character of the mountains that run from Switzerland into Germany? What branches of the Alpine range run to the east and south-east?

What is the character of the mountains in the Balkan peninsula and in Greece?

Which are the highest mountains of Europe? Which are next in height? Give a general description of Spain. How high is the chief portion of Spain? Describe the climate of Spain. Why are the Spanish plateaus almost treeless? What are the most fertile parts of Spain? What are the chief products of Spain? What very important rock at the south-west of Spain? Why is it so important? Who owns it?

What is the most important river of Italy? What is the chief mountain range of Italy? What lakes in the northern part of Italy? In what way does Venice differ from other cities? How is Italy made fertile? What are the chief productions of Italy?

What mountains divide High Europe from Low Europe? Describe the Plain of Hungary. Why are so many harvesting machines sent to the Hungarian Plain from Canada? What are the leading products of Austria-Hungary?

How long is the Scandinavian Peninsula? Describe the western coast of Norway. Why are so many fish found near Norway? What celebrated whirlpool is on the west coast of Norway? Explain why the part of Norway within the Arctic Circle has such pleasant weather. How long is the day in summer at North Cape? What two races inhabit the peninsula of Scandinavia? What Yellow race lives in the northern part of Scandinavia? What are the chief exports of Norway and Sweden? How was Iceland formed? What two large islands form the leading portions of the British Isles? Why is there so great a rainfall in the British Isles? Which is the most mountainous part of the British Isles? What are the chief natural productions of Great Britain and Ireland? What is the leading ship-building district in the world? Why is this district suitable for shipbuilding? Describe the government of the British Isles. Explain what is meant by the United Kingdom: By the British Empire. How are governors of British Colonies appointed?

Describe the physical condition of France. What is the nature of the country in Holland and Belgium? What is the greatest difference between the appearance of these countries and of Canada? What celebrated battle was fought in Belgium? Are the regions of Europe north and west of the Alps well or poorly supplied with rain? Why is this so?

What are the chief productions of France, of Belgium, of Holland, of Germany?

What country ranks next to England in trade?

What is the general character of the surface of Russia? Why are there such large rivers in Russia? What is the nature of the climate of Russia? Why is there such a wide range of temperature in Russia? Why is there not enough rain in all parts of Russia? Why is the district around the Caspian Sea a salt marsh?

Asia.

What proportion of the earth's surface is covered by Asia? How much of the land surface is in Asia?

Why is the rainfall on the inner part of Tibet so light? Why are the lakes of Tibet salt? Where are the highest lakes in the world? What is the name of the highest mountain in the world? What is the highest mountain range in the world? Why do the rivers of India overflow their banks?

Why is the Desert of Gobi barren? Which is more barren—Gobi or Sahara?

What are monsoons? What influence do they have on the climate of Southern Asia? On the productiveness of the country? Where is the Dead Sea? Why is it so salt? Describe Arabia. What is the most noted production of Arabia?

What mountains run between Europe and Asia? What great plain in the north of Asia? What is the largest lake in the world? What three great rivers in the northern plain of Asia? What are tundras? What are steppes? What part of Asia has the largest forests? Where are the greatest grain fields of Asia?

What two great rivers have made a large part of the eastern part of Asia? Describe the delta plains of the Yellow River. What fractional part of the human race lives in China? To what race do the Chinese belong?

What part of the world has the largest rainfall? What are the three great river systems of India? How was the great plain of Northern India formed? What is the leading crop of the flood plain of India? What fractional part of the human race lives in India? Name the chief islands east and south-east of Asia. Make a list of the countries of Asia and their chief products.

Africa.

Why are the rivers of Africa not navigable far from the coast? What is notable in regard to the coast line of Africa. Why is the Sahara a desert? What is the general shape of a vertical section of Africa? What race inhabits most of Africa? Where is the Sudan? Why is it an important country? What European country controls the Sudan?

Where are the richest iron mines in the world? How does the Nile compare in length with the Amazon and the Mississippi? What large island is south-east of Africa?

Australia.

How does Australia compare with Canada in size? What is the nature of Australia near the coast? What is the nature of the central portion of Australia? Why are the lakes and marshes salt in the interior of Australia? Why are the largest of the Australian forests in the eastern part of the continent? Where are the great Australian gold mines found? To what race do the natives of Australia belong? Where are the most thriving Australian colonies? Name the most important islands and groups of islands north and east of Australia. Where are the Hawaiian Islands? To what country do they belong?

SUPPLEMENT.

Population of the Principal Cities of the World.

NORTH AMERICA.

British America—

Year.		Population.
1901	Montreal	267,730
1901	Toronto	208,041
1901	Quebec	68,840
1901	Ottawa	59,928
1901	Hamilton	52,634
1901	Winnipeg	42,340
1901	Halifax	40,832
1901	St. John	40,711
1901	London	37,983
1901	St. John's	29,594
1901	Vancouver	26,133
1901	Victoria	20,816

Central America—

1898	Guatemala	74,000
1901	San Salvador	59,540
1900	Leon	45,000
1900	Managua	30,000
1900	San José	25,000

Mexico—

1901	Mexico	344,721
1901	Guadalajara	101,208

United States—

See page 219.

West Indies—

1902	Havana	275,000
1901	Port au Prince	50,000
1893	Kingston	47,000
1902	Santiago	43,090
1902	Matanzas	36,374
1902	Cienfuegos	30,038

SOUTH AMERICA.

Argentina—

1904	Buenos Ayres	965,000
1903	Rosario	122,156
1903	La Plata	75,023
1903	Cordoba	50,000

Bolivia—

1900	La Paz	60,000
1900	Sucre	20,900

Brazil—

1900	Rio de Janeiro	758,000
1900	Bahia	200,000
1900	Pernambuco	190,000
1900	Pará	40,000

Chile—

Year.		Population.
1901	Santiago	296,695
1901	Valparaiso	132,941

Colombia—

1902	Bogotá	120,000
1902	Medellin	53,000

Ecuador—

1904	Quito	80,000
1904	Guayaquil	51,000

Guiana—

1891	Georgetown	53,000
1901	Paramaribo	31,865
1900	Cayenne	12,000

Paraguay—

1900	Assuncion	51,700

Peru—

1901	Lima	100,000
1901	Arequipa	35,000
1901	Cuzco	20,000
1901	Callao	16,000

Uruguay—

1900	Montevideo	253,000

Venezuela—

1894	Caracas	73,000
1894	Valencia	39,000
1894	Maracaibo	34,000

EUROPE.

Austria-Hungary—

1900	Vienna	1,674,957
1900	Budapest	732,322
1900	Prague	201,589
1900	Trieste	134,143

Belgium—

1901	Brussels	562,893
1901	Antwerp	278,093
1901	Liege	160,216
1901	Ghent	162,291

Balkan States—

1904	Constantinople	1,125,000
1900	Bukharest	282,000
1904	Saloniki	105,000
1896	Athens	111,000
1900	Sofia	67,900

Denmark—

Year.		Population.
1901	Copenhagen	378,235

England and Wales—

1903	Greater London	6,806,000
1901	Liverpool	684,000
1901	Manchester	544,000
1901	Birmingham	522,000
1901	Leeds	428,000
1901	Sheffield	381,000
1901	Bristol	329,000
1901	Bradford	279,000
1901	Cardiff	164,000

France—

1901	Paris	2,714,000
1901	Marseille	491,000
1901	Lyon	459,000
1901	Bordeaux	257,000
1901	Lille	210,000
1901	Toulouse	150,000
1901	Havre	120,000

Germany—

1900	Berlin	1,888,000
1900	Hamburg	705,000
1900	Munich	499,000
1900	Leipzig	456,000
1900	Breslau	422,000
1900	Dresden	396,000
1900	Cologne	372,000

Ireland—

1901	Belfast	349,000
1901	Dublin	290,000
1901	Cork	76,000
1901	Limerick	38,000

Italy—

1901	Naples	563,000
1901	Milan	491,000
1901	Rome	462,000
1901	Turin	335,000
1901	Palermo	309,000
1901	Genoa	234,000
1901	Florence	205,000
1901	Venice	151,000

Netherlands—

1902	Amsterdam	535,000
1902	Rotterdam	348,000
1902	The Hague	222,000

Norway and Sweden—

Year.		Population.
1902	Stockholm	305,000
1900	Christiania	227,000
1902	Gottenborg	133,000
1900	Bergen	72,000

Portugal—

1900	Lisbon	356,000
1900	Oporto	167,000

Russia—

1897	St. Petersburg	1,267,000
1897	Moscow	989,000
1897	Warsaw	638,000
1897	Odessa	405,000
1900	Riga	283,000

Scotland—

1903	Glasgow	786,000
1903	Edinburgh	327,000
1903	Dundee	162,000

Spain—

1900	Madrid	539,000
1900	Barcelona	533,000
1900	Valencia	213,000
1900	Sevilla	148,000
1900	Malaga	130,000

Switzerland—

1904	Zurich	169,000
1904	Basel	120,000
1904	Geneva	110,000
1904	Bern	68,000

ASIA.

Asiatic Russia

1897	Tiflis	160,000
1897	Tashkend	156,000
1897	Baku	112,000
1897	Irkutsk	51,000

China—

1903	Canton	880,000
1899	Pekin	1,500,000
1903	Tientsin	750,000
1903	Hankau	870,000
1903	Fuchau	624,000
1903	Shanghai	620,000

British India—

1901	Calcutta	1,125,000
1901	Bombay	776,000
1901	Madras	509,000

Population of the Principal Cities of the World.—Continued.

Year.		Population.
	British India—*Continued.*	
1901	Hyderabad	448,000
1901	Lucknow	264,000
1901	Rangoon	234,000
1901	Benares	209,000
1901	Delhi	208,000
1901	Lahore	202,000
1901	Cawnpur	197,000
1901	Mandalay	183,000
	French Indo-China—	
1901	Hanoi	150,000
1901	Hué	80,000
1901	Saïgon	47,000
	East India Islands—	
1903	Manilla	302,000
1901	Surabaya	146,000
1901	Batavia	115,000

Year.		Population.
	Japan—	
1902	Tokyo	1,818,000
1902	Osaka	995,000
1902	Kyoto	380,000
1902	Yokohama	326,000
	Korea—	
1902	Seoul	196,000
	Siam—	
1901	Baugkok	350,000
	Southwest Asia—	
1902	Teherân	280,000
1904	Smyrna	201,000
1904	Damascus	225,000
1902	Tabriz	200,000
1904	Bagdad	145,000
1904	Aleppo	127,000
1902	Ispahân	70,000

Year.		Population
1895	Kâbul	60,000
1904	Mecca	60,000
1895	Kandahár	50,000
1904	Jerusalem	42,000
1895	Herát	30,000
	AFRICA.	
1897	Cairo	570,000
1897	Alexandria	319,000
1900	Tunis	170,000
1902	Cape Town	167,000
1900	Fez	140,000
1895	Morocco	140,000
1904	Johannesburg	158,000
1895	Tananarivo	100,000
1901	Algiers	96,000
1901	Oran	88,000
1895	Kuka	60,000

Year.		Population.
1897	Port Said	50,000
1904	Zanzibar	50,000
1901	Freetown	34,000
1900	Tangier	30,000
1895	Tripoli	30,000
1902	Kimberley	29,000
1897	Monrovia	5,000
	OCEANIA.	
1901	Melbourne	496,000
1901	Sydney	482,000
1901	Adelaide	165,000
1901	Brisbane	119,000
1901	Auckland	67,000
1901	Dunedin	52,000
1901	Wellington	49,000
1900	Honolulu	39,000
1901	Hobart	25,000

Countries and Colonies.

Year.		Area.	Population.
	NORTH AMERICA.	**9,300,000.**	**102,000,000.**
1901	Belize	7,500	37,000
1901	Canada	3,729,665	5,371,315
1902	Costa Rica	18,400	302,000
1899	Cuba	44,000	1,572,000
1900	Guatemala	48,000	1,647,000
1901	Haiti (Island)	28,000	1,900,000
1902	Honduras	46,000	650,000
1905	Mexico	767,000	13,605,000
1901	Newfoundland	42,200	217,000
1900	Nicaragua	49,500	500,000
1901	Salvador	7,200	1,006,000
1900	United States	3,567,563	76,303,387
	SOUTH AMERICA.	**7,000,000.**	**40,000,000.**
1902	Argentina	1,135,000	5,022,000
1895	Brazil	3,218,000	16,000,000
1898	British Guiana	104,000	286,000
1900	Bolivia	703,000	1,633,000
1901	Chile	307,000	3,146,000
1895	Colombia	504,000	4,000,000
1901	Dutch Guiana	46,000	72,000
1890	Ecuador	116,000	1,205,000
1901	French Guiana	30,500	32,000
1899	Paraguay	157,000	630,000
1896	Peru	695,000	4,609,000
1902	Uruguay	72,000	978,000
1894	Venezuela	594,000	2,444,000
	EUROPE.	**3,900,000.**	**400,000,000.**
1900	Austria-Hungary	265,000	45,404,000
1900	Belgium	11,400	6,693,000
1904	Bulgaria	38,000	3,744,000
1901	Denmark	15,300	2,464,000
1901	England	50,800	30,805,000
1901	France	207,000	38,961,000
1900	Germany	208,700	56,367,000

Year.		Area.	Population.
1896	Greece	25,000	2,433,000
1901	Ireland	32,600	4,458,000
1900	Italy	110,000	31,856,000
1902	Montenegro	3,600	228,000
1902	Netherlands	12,600	5,347,000
1900	Norway	125,000	2,240,000
1900	Portugal	34,000	5,016,000
1900	Rumania	50,700	5,912,000
1897	Russia	2,095,000	106,000,000
1901	Scotland	30,000	4,472,000
1900	Servia	19,000	2.493,000
1900	Spain	195,000	18,618,000
1902	Sweden	173,000	5,198,000
1900	Switzerland	16,000	3,315,000
1903	European Turkey	65,000	6,130,000
1901	Wales	7,400	1,456,000
	ASIA.	**17,000,000.**	**876,000,000.**
1903	Afghanistan	215,000	4,000,000
1903	Arabia	1,000,000	1,050,000
1903	Asiatic Turkey	693,000	17,000,000
1901	Baluchistan	132,000	1,050,000
1897	Borneo	290,000	1,750,000
1897	Celebes	71,000	2,000,000
1900	Chinese Empire	4,277,000	426,047,000
1901	India (British)	1,766,000	300,000,000
1901	Indo-China (French)	256,000	18,000,000
1900	Java	51,000	28,746,000
1899	Japan	148,000	46,542,000
1900	Korea	82,000	10,000,000
1901	Nepal	54,000	4,000,000
1902	Persia	628,000	9,500,000
1900	Philippines	128,000	8,000.000
1897	Russia in Asia	6,564,000	22,697,000
1901	Siam	220,000	5,000,000
1900	Sumatra	161,000	3,167,000

Countries and Colonies.

(CONTINUED.)

AFRICA.		**11,500,000.**	**130,000,000.**
Year.		Area.	Population.
1903	Abyssinia	150,000	3,500,000
1896	Algeria	185,000	4,429,000
1902	Cape Colony	221,000	2,500,000
1903	Egypt	400,000	9,821,000
1900	Kongo State	900,000	30,000,000
1903	Liberia	35,000	2,060,000
1901	Madagascar	228,500	2,505,000
1903	Morocco	220,000	5,000,000
1903	Orange River Colony	48,000	208,000
1900	Sahara	2,000,000	2,550,000
1901	Sudan	2,000,000	50,000,000
1904	Transvaal	111,000	1,268,000
1903	Tripoli	340,000	1,000,000
1901	Tunis	51,000	1,906,000
OCEANIA.		**3,500,000.**	**6,000,000.**
1900	Hawaii	6,500	154,000
1900	New Guinea	311,000	660,000
1901	New South Wales	310,700	1,359,000
1901	New Zealand	104,500	772,000
1901	Queensland	668,500	503,000
1901	South Australia	904,000	362,000
1901	Victoria	88,000	1,201,000
1901	West Australia	975,000	84,000

Leading Cities of the United States.

POPULATION, 1900 (over 100,000).

New York, N.Y.	3,437,202	Louisville, Ky.	204,731
Chicago, Ill.	1,698,575	Minneapolis, Minn.	202,718
Philadelphia, Pa.	1,293,697	Providence, R.I.	175,597
St. Louis, Mo.	575,238	Indianapolis, Ind.	169,164
Boston, Mass.	560,892	St. Paul, Minn.	163,065
Baltimore, Md.	508,957	Kansas City, Mo.	163,752
Cleveland, Ohio	381,768	Rochester, N.Y.	162,608
Buffalo, N.Y.	352,387	Denver, Colo.	133,859
San Francisco, Cal.	342,782	Toledo, Ohio	131,822
Cincinnati, Ohio	325,902	Allegheny, Pa.	129,896
Pittsburg, Pa.	321,616	Omaha, Neb.	102,555
New Orleans, La.	287,104	Worcester, Mass.	118,421
Detroit, Mich.	285,704	Syracuse, N.Y.	108,374
Milwaukee, Wis.	285,315	New Haven, Conn.	108,027
Washington, D.C.	278,718	Paterson, N.J.	105,171
Newark, N.J.	246,070	Fall River, Mass.	104,863
Jersey City, N.J.	206,433	Los Angeles, Cal.	102,479

Average Height of Plateaus.

	Feet.		Feet.
Tibet	14,000	Columbia	1,500
Bolivia	12,000	Great Basin	4,000
The Pamirs	12,000	Gobi	4,000
Mexico	8,000	Guiana	2,500
Abyssinia	7,000	Brazil	2,000
Australian	5,000	Switzerland	2,000
Colorado	5,000	Dekkan	2,000

Height of Noted Mountains.

NAME.	LOCATION.	Height in feet.
Aconcagua	Chile	22,422
Ararat	Turkey	17,260
Chimborazo	Ecuador	21,420
Dapsang	Tibet	28,278
Elburz	Russia	18,526
Everest	India	29,002
Kenia	East Africa	18,045
Kilauea	Hawaiian Islands	4,040
Kilimanjaro	East Africa	19,600
Kanchanjanga	India	28,156
Logan	Canada	19,500
Mauna Loa	Hawaiian Islands	13,600
Mitchell	North Carolina	6,711
Mt. Blanc	France	15,810
Orizaba	Mexico	17,380
Pike's Peak	Colorado	14,147
Popocatepetl	Mexico	17,784
St. Elias	Canada	18,010
Shasta	California	14,440
Vesuvius	Italy	3,948
Washington	New Hampshire	6,288
Whitney	California	14,898

Rivers and River Basins.

RIVER.	Area of Basin, square miles.	Length in miles.
Amazon	2,500,000	4,000
Kongo	1,500,000	3,300
Nile	1,400,000	4,000
Mississippi (Missouri)	1,250,000	4,200
Plata	1,250,000	2,300
Yangtze	500,000	3,300
Volga	500,000	2,300
Ganges	450,000	1,800
St. Lawrence	350,000	2,000
Danube	300,000	2,000
Orinoco	300,000	1,500
Columbia	250,000	1,400
Colorado	210,000	1,100

Area of Oceans.

OCEAN.	Square miles.	OCEAN.	Square miles.
Pacific	70,000,000	Indian	23,000,000
Atlantic	35,000,000	Antartic	7,000,000
Arctic	4,000,000		

Principal Salt Lakes.

LAKE.	Area in square miles.	LAKE.	Area in square miles.
Caspian Sea	180,000	Issik-Kul	2,466
Aral	26,300	Van	2,000
Balkash	12,500	Great Salt Lake	1,875
Eyre	4,000	Urumiyah	1,730
Dead Sea	444		

Principal Fresh-Water Lakes.

LAKE.	Area in sq. miles.	LAKE.	Area in sq. miles.
Lake Superior ..	32,000	Lake of the Woods ..	7,650
Victoria Nyanza ..	26,500	Ladoga ..	7,100
Michigan ..	22,450	Albert Nyanza ..	7,500
Huron ..	23,000	Ontario ..	6,900
Tanganyika ..	15,000	Athabasca ..	4,600
Baikal ..	14,000	Titicaca ..	3,800
Great Bear ..	14,000	Nicaragua ..	3,600
Nyassa ..	12,000	Onega ..	3,380
Chad ..	11,000	Tun-ting ..	2,300
Great Slave ..	10,800	Wener ..	2,300
Bangweolo ..	10,200	Champlain ..	1,500
Winnipeg ..	8,900	Dembea ..	1,360
Erie ..	7,800	Geneva ..	240

Aggregate Trade of Canada.

IMPORTS AND EXPORTS, BY COUNTRIES, 1904.

Great Britain ..	$179,552,285	West Indies ..	$9,066,417
United States ..	230,170,729	France ..	7,887,290
Germany ..	9,847,767	China and Japan	3,124,090

Total Exports.		Total Imports.	
Great Britain ..	$117,591,376	Great Britain ..	$ 61,960,909
United States ..	73,173,549	United States ..	156,997,180

PRODUCE OF MINES, 1903.

		Value Exported in 1903.
Coal	$15,957,946	$ 5,452,434
Gold	18,834,490	16,437,528
Silver	1,700,779	1,802,690
Nickel	5,002,204	878,159
Lead	762,660	384,077
Copper	5,728,261	2,907,705
Gypsum	384,259	307,398
Iron	707,838	733,230

PRODUCE OF FOREST.

	Value of Exports in 1904.		Value of Exports in 1904.
Lumber ..	$26,005,318	Wood Pulp ..	$ 2,409,074
Square Timber ..	2,132,274	Wood for Wood Pulp	1,788,049

PRODUCE OF FISHERIES, 1902.

		Value Exported in 1902.
Codfish	$4,015,978	$2,781,822
Salmon	4,335,040	2,102,099
Lobsters	3,133,737	2,904,360
Herring	1,723,098	517,743

AGRICULTURAL PRODUCTS, 1904.

	Exports of 1904.		Exports of 1904.
Wheat .	$18,225,525	Barley ..	$ 489,437
Apples (green) ..	4,591,169	Peas ..	1,133,268
Maize ..	45,045	Flour ..	6,131,015
Hay ..	1,898,068	Oats ..	1,603,461

ANIMALS AND THEIR PRODUCTS, 1904.

	Exports of 1904.		Exports of 1904.
Cheese ..	$24,184,566	Horses ..	$ 401,607
Butter ..	4,724,155	Furs ..	2,622,327
Cattle ..	10,424,671	Wool ..	306,289
Bacon ..	12,603,521	Eggs ..	1,053,396

Longest Canadian Railways.

	Miles.
Canadian Pacific	8,062
Grand Trunk	3,158
Intercolonial and Prince Edward Island	1,576
Canadian Northern	2,500

Canals.

RIVER ST. LAWRENCE AND LAKES—	Length in miles.	No. of Locks.	Rise in feet.
Lachine	8½	5	45
Soulanges	14	5	84
Cornwall	11	6	48
Farran's Point	1	1	3½
Rapide Plat	3⅔	2	11½
Galops	7⅓	3	15½
Murray	5⅙	—	—
Welland	26¾	26	326¾
Sault Ste. Marie	1⅛	1	18
OTTAWA AND RIDEAU RIVERS—			
Ste. Anne's Locks.	⅛	1	3
Carillon	¾	2	16
Chute à Blondeau	⅛	—	—
Grenville	5¾	5	43¾
Rideau	16½	49	282¼
Perth Branch	6	2	26
RICHELIEU AND LAKE CHAMPLAIN—			
St. Ours Lock and Dam ..	⅛	1	5
Chambly	12	9	74

NOTE.—The Soulanges Canal takes the place of the Beauharnois Canal.

NOTE 2.—Total length of navigable waters on the Rideau Canal is 126¼ miles.